









# ARBITRAGE

IN

BULLION, COINS, BILLS, STOCKS, SHARES AND  
OPTIONS



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# ARBITRAGE

IN

## BULLION, COINS, BILLS, STOCKS, SHARES AND OPTIONS

CONTAINING

A SUMMARY OF THE RELATIONS BETWEEN THE LONDON  
MONEY MARKET AND THE OTHER MONEY  
MARKETS OF THE WORLD

BY

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SECOND EDITION—REVISED AND ENLARGED

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## PREFACE.

SINCE the publication of the first edition, several countries have given up the silver standard, and have adopted a gold standard ; Germany has withdrawn the talers from circulation, and has established the pure gold standard ; the silver dealings in the East have been put on a new basis since 1906 ; the Paris bill market has introduced a new system for the quotation of foreign exchanges since 1907 ; France and England have lately increased the stamp duties for Stock Exchange dealings ; international commerce has risen considerably during the last six years.

The Author has taken all these changes into consideration, and has endeavoured to improve the book, and to render it as useful as possible. For this reason he has rewritten the pages treating of Chinese currency and arbitrage in bars. The figures given there are based upon metal shipments that have come within the author's own experience.

The Author is much indebted to Consulates, Mints, and Banking Institutions, especially to Mr. C. S. Addis, manager of the Hong-Kong and Shanghai Banking Corporation in London, and to Mr. E. B. Skottowe, manager of the Chartered Bank of India, Australia, and China in Shanghai, and considers it his pleasant duty to express his warm thanks to them here.

H. D.

LONDON, *August*, 1910.

## PREFACE TO THE FIRST EDITION.

THE literature on the subject of the present book is remarkably meagre. We look practically in vain for any book in any language treating of the highly-important and likewise interesting subject of the transfer of money from one nation to another. The fact is all the more astonishing, as Arbitrage is of the greatest importance to the commerce of the world—see the paragraph “Introductory Remarks”—and as international trade has developed so enormously through the ever-increasing facilities of communication between the most distant business centres.

A few books on mercantile Arbitrage, published in Germany some thirty or forty years ago, are now antiquated, and therefore of little or no value.

**Goschen's** “Theory of Foreign Exchanges” (dated 1866) treats the subject from a philosophical point of view, but without entering into any practical details; and two other books, the best known of their kind—**Tate's** “Modern Cambist,” and **Haupt's** “Arbitrages et Parités”—were last edited in 1893, and since then the following changes have taken place:—

- (1) The currency of India, Russia, Japan, Austria-Hungary, Chile, and Costa Rica has been reformed.
- (2) The British dollar, and some foreign coins of a new type have been struck, and put into circulation.

(3) The Paris Stock and Share Market has been reorganized.

(4) The South African Mining Shares, introduced since 1894 on the Paris Market, have become the principal articles for Arbitrage dealings between the Paris Bourse and the London Stock Exchange.

(5) The creation of the 4 % Spanish "Sealed" Bonds has done away with the Arbitrage in Exterior Bonds with the Madrid Bourse.

(6) The silver quotation on the Paris Market, formerly given in per cent discount against the basis of fr. 218.89, is now expressed in francs per kilogramme.

(7) The stamp duty on the Continental Bourses has been raised.

During the last eleven years not a single publication has appeared on the book market of the world touching on the subject of the present work, which proposes to fill the gap in a concise but, nevertheless, exhaustive manner.

It treats likewise of the relations between the New York Money Market and the Money Markets in the East, as the trade between the United States and Asia has grown beyond expectation during the last decade.

The book deals with the various branches of the Arbitrage — I. Arbitrage in Bullion and Coins. II. Arbitrage in Bills of Exchange. III. Stock and Share Arbitrage, and IV. Arbitrage in Options—in separate chapters, and any section can therefore be used for instant reference.

The Author has taken the greatest pains to render the work intelligible, and to bring it up-to-date. His long experience as arbitrager on the various Bourses has enabled him to lay particular stress on the practical part, and he therefore hopes that it will acquire numerous

friends amongst bankers, Stock Exchange men, economists, and financiers of all nations; and will likewise be found useful by capitalists generally, even those having but slight business relations beyond their own country.

H. D.

LONDON, *April*, 1904.

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## INTRODUCTORY REMARKS.



THE “**Arbitrage**” compares prices of articles of merchandise dealt in on various markets in order to find out their differences.

The word “**Arbitrage**” is French, derived from the verb “*arbitrer*,” which means to judge or estimate; the person calculating the **Arbitrage** is called “**Arbitrager**,” or “**Arbitrageur**,” or “**Arbitragist**”.

We may compare the prices of any article, whether expressed in English money or foreign money.

Take for instance the article coffee. We may compare the price of a ton of best Brazil coffee in London with the price of the same quantity and quality coffee in Liverpool; or the London price of the said quantity with its New York price; or we may find out the lowest and highest price of the said coffee in London, Liverpool, Havre, Rio de Janeiro, New York and other markets at the same time.

If we have found, for instance, that there is a considerable **difference**—also called “**margin**”—between the prices of London and Havre, and London is the cheaper market of the two, it would be profitable to buy in London and to sell in Havre. In consequence of these transactions the price of coffee in London would rise—because of our purchases—and in Havre go lower because of our sales, and

ultimately the price of coffee in London and Havre will show very little difference, and might become equal.

The Arbitrage, therefore, equalizes the prices. It can supply a demand in one market from the stock of another.

For instance, high wheat prices in one market will induce shipments from other markets with lower prices, and Arbitrage can therefore prevent exorbitant rates. A high money rate in one commercial centre cannot remain in force long, as capital from the other centres with lower rates will soon flow in, and cheapen the value of money. These examples will suffice to show the importance of Arbitrage for the commerce of the world.

In the general sense of the term, we can therefore speak of Arbitrage in wholesale commodities, in freights, in bullion, coins, bills of exchange, and stocks and shares. But usually it is only applied to the comparison of prices of the last-named articles, lying in the line of bankers and financiers, and means especially the examination of the relations between the moneys of the different nations (“**Foreign Exchanges**”).

These “**Foreign Exchanges**” express the rates at which payments from one nation to another are to be effected.

The comparison of two prices when both are expressed in English money is simple enough—a mere subtraction gives the difference. One of the prices which is taken as a basis for the calculation is also called the “**parity price**” or, shortly, “**parity**”.

But when one of the prices is expressed in foreign money, and the quotation given for different quantities, the working out of the difference is more complicated, and the Arbitrager must be acquainted with the exact value of the foreign money, and the practice of the foreign market. Thorough knowledge of all the usages, and quickness at

figures in order to work out rapidly the difference in the prices ("margins"), are therefore essential qualifications for a capable Arbitrager.

The solution of Arbitrage problems does not require a profound knowledge of mathematics, not even a familiarity with logarithms—not such as is demanded by a well-known writer on this subject for the calculations connected with the Arbitrage in bills;<sup>1</sup> correct reasoning and reliable reckoning fully suffice. Besides, all Arbitrage problems can be solved by means of the chain rule; against its constant use it can only be urged that it favours mechanical work at the expense of reasoned thought.

The reader who is not conversant with the nature of the chain rule will welcome the following remarks:—

The comparison of two quantities which depend upon other known quantities, leads by means of the chain rule to a series of equations which follow each other like the links of a chain, hence the name, "chain rule" (German, "Kettensatz," French, "règle conjointe"). The equations are arranged in such a way that the link on the right bears the same name as the immediately following link on the left, and that the last link is of the same description as the first with which the sum begins. The value of the unknown quantity is then taken as equal to the value of a fraction whose numerator is the product of all the links on the right, and whose denominator is the product of all the links on the left.

The following example may serve as an illustration:—

How many dollars are equivalent to fr. 8000, if fr. 100 equal m. 81, and m. 400 equal \$95?

According to chain rule, this would be:—

<sup>1</sup> P. Kelly, "The Universal Cambist, etc.," London, 1821.

$$\begin{aligned}
 \$x &= 8000 \text{ fr.} \\
 \text{fr. } 100 &= 81 \text{ m.} \\
 \text{m. } 400 &= \$95 \\
 \text{The solution shows } x &= \frac{8000 \times 81 \times 95}{100 \times 400} = \mathbf{1539}
 \end{aligned}$$

For shortness' sake, the description of the links on the left can be suppressed, and the chain can be written in the following manner:—

$$\begin{aligned}
 \$x &= 8000 \text{ fr.} \\
 100 &= 81 \text{ m.} \\
 400 &= \$95
 \end{aligned}$$

The same problem can be solved by the following method:—

As fr. 100 = m. 81, fr. 8000 must equal  $80 \times 81 =$  m. 6480, and as m. 400 equal \$95, hence m. 6480 =  $\frac{6480}{400} \times 95$   
= **\$1539.**

The solution arrived at in that way requires reasoning, while a solution by chain rule can be done quite mechanically.

## CURRENCY.



ADVANCING civilization and increasing commerce soon showed the inefficiency of simple barter, and necessitated the use of money as a medium of exchange. "By a tacit concurrence, almost all nations, at a very early period, fixed upon certain metals, and especially gold and silver, to serve this purpose."<sup>1</sup>

And to-day we still find money as a medium of exchange represented by coins of metal (metallic money) or notes (fiduciary money); the currency of a country can consequently be based on :—

- (a) Gold.
- (b) Silver.
- (c) Gold and silver.
- (d) Paper.

Where the currency is **based on gold**, all payments must be effected in the legal gold coins of the land. Coins minted in any other metal can only be legal tender up to a very small amount, as, for instance, in England, where silver coins are legal tender up to 40 shillings, and bronze coins up to 1 shilling only. Silver itself is an article of merchandise, like copper, iron, tin, etc.

In countries with **silver currency**, the legal tender consists of legally-minted silver coins. Gold is there a commercial article with fluctuating prices.

In countries with a **gold and silver currency** ("double" or "bimetallic" standard), gold coins and silver coins

<sup>1</sup> John Stuart Mill, "Principles of Political Economy".

represent concurrently the legal tender; and as long as the other nations are convinced that silver coins can be exchanged at any moment for their equivalent in gold, they will accept the silver coins at the full value expressed on them, even if their intrinsic silver value should be less than their circulation value (e.g. the French 5-franc piece, United States silver dollar).

There has long been a controversy as to whether the double standard should not be adopted by all nations, with a fixed ratio between gold and silver, but the bimetallic currency has very little chance of being generally introduced, on account of the ever-increasing output of silver, and the consequent falling price, and because of the opposition of the nations which have placed their currency on a gold basis. To-day the whole question is rarely raised, and is considered as settled.

In 1865 the "**Union monétaire latine**" was formed. Belgium, France, Italy, Switzerland, and Greece (in 1868) agreed that their coins (gold and silver) should pass concurrently in their respective countries. The continuous fall in the price of silver told against that convention, which was consequently several times on the point of being abrogated.

**France and the other members of the "Union"** (with the exception of Greece) and **Holland**, have **theoretically a double standard**, but **practically a gold standard**, as the minting of those silver coins which are legal tender for any amount has been suspended in all these countries.

These coins are the 5-franc piece (within the "Union") and the Reichstaler, Guilder, and 50 cent. pieces in Holland and its colonies.

Subsidiary silver coins (coins with limited legal tender), on the contrary, are still issued, even in ever-increasing numbers in accordance with the growing trade requirements.

In that way the "Union" (under the leadership of France) and Germany resolved, in the year 1908, to increase the circulation of subsidiary coins from 7 francs to 16 francs, and from 15 marks to 20 marks per capita.

France will secure the necessary metal by the remelting of 5-franc pieces, while the other members of the "Union" not possessing a great number of such coins, and not able to spare them, will be forced to have recourse to the silver market. Germany will continue the changing of the old taler pieces into subsidiary coins, and will only be interested in the silver market after the completed re-coinage of the talers. The intended re-coinage of the 5-franc pieces will naturally reduce their amount—a total disappearance of that coin can, on account of its great number, only take place after many years; but as long as the remaining pieces are legal tender, we cannot speak of a pure gold standard. Until the definite establishment of a pure gold standard, we are in the countries of the "Union" and in Holland face to face with a "limping standard" (French, "éalon boiteux," German, "hinkende Währung"), which in former years—before the discovery of the South African goldfields—might have led to a disorganization of the international money market. But in reality the international payments of these countries have been effected precisely as if every one of them had adopted a pure gold standard.

In countries with a metallic currency, **notes** are nothing but substitutes for the metal itself, they are only used to facilitate commerce. They must therefore be exchangeable (convertible) into metal at any moment for the amount of their face value.

But when the currency is based on precious metals **and** notes, and the latter are in excess of the former, the notes are naturally non-convertible. They pass from hand to

hand for the sums expressed on them, and are quite suitable means for discharging payments at home. But with regard to payments abroad, they lose their nature as account-settlers for the full value stated on them. The rate at which they will be taken by other nations will depend upon the quantity of metal and the nature of the securities (if any) deposited for them as cover. Metal in such countries will command **premium** against notes, such premium also cal'ed "**agio**," as, for instance, in Colombia where the premium on gold is 9,900; i.e. 100 metallic pesos are valued at 10,000 paper pesos.

The issued coins can be : **current coins, subsidiary coins, and trade coins.**

**Current coins** are legal tender for any amount.

**Subsidiary coins** (French, "monnaie divisionnaire" or "monnaie d'appoint"; German, "Scheidemünze") are manufactured out of silver, bronze, or nickel, and are legal tender only for a small fixed amount.

**Trade coins** are only minted to facilitate commerce in distant countries, without the obligation of redemption, e.g. the British dollar, the French piastre in Indo-China, the Austrian Maria Theresa taler.

The currency of a country is named after the monetary unit which serves as standard. In that sense we speak of pound, dollar, franc, mark, kronen currency, or of English, American, French, German, Austrian currency. Argentina, Brazil, and other South American States, Greece, Portugal, and Russia have legally a gold standard, but in reality a paper currency.

The following list takes these changes into consideration :—

(a) **Countries with gold currency are :—**

South Africa—West Africa—Australia with Tasmania and New Zealand—Austria-Hungary—Belgium—

Bolivia — Bulgaria — Canada — Costa Rica — Denmark — Egypt — France — Germany — Great Britain — Japan — Italy — Netherlands and Colonies — Norway and Sweden — Peru — Roumania — Switzerland — Tunis and Uruguay.

(b) **Countries with silver currency are :—**

China — Honduras — Hong-Kong — Korea — Labuan — Mauritius — Morocco — Persia — Salvador and Tripoli.

(c) **Countries with gold and silver standard are :—**

Ceylon — India — Mexico — Servia — Siam — Straits Settlements — Turkey — United States — Venezuela and West Indies.

(d) **Countries with paper currency are :—**

Argentine — Brazil — Chile — Colombia — Ecuador — Greece — Guatemala — Hayti — Liberia — Nicaragua — Paraguay — Portugal — Russia and Spain.

**Countries without any currency are :—**

Abyssinia, and independent Africa (territory not in possession of a European power) where commerce is carried on by exchange of cotton, glass pearls, salt, cowries, brass wires and Maria Theresa taler (see p. 74).

The following table<sup>1</sup> shows the amount of the circulating money (metallic and fiduciary) in the various countries per capita. We see from it that, relatively, the greatest amount of currency is at the service of the people in the Argentine and in France, and that, absolutely, the most gold coins are in circulation in the United States, Germany, France, British Empire, and Russia :—

<sup>1</sup> From the "Report of the Director of the Mint," Washington, 1908.

Country.	Population in Millions.	Per Capita.			
		Gold \$	Silver \$	Paper \$	Total \$
United States - - - -	86.800	18.58	8.23	8.98	35.79
Argentine - - - -	6.000	23.30	—	39.93	63.23
Austria-Hungary - - - -	49.900	6.07	2.09	2.63	10.79
Belgium - - - -	7.200	4.28	5.29	17.97	24.54
Brazil - - - -	18.000	2.81	1.39	22.56	26.76
<b>British Empire—</b>					
Australia - - - -	4.800	33.19	2.08	—	35.27
Canada - - - -	6.000	11.05	1.12	10.20	22.37
United Kingdom - - - -	44.600	12.65	2.62	2.63	17.90
India - - - -	295.200	0.38	2.81	0.13	3.32
South Africa - - - -	7.700	6.31	2.59	—	8.90
Straits Settlements - -	5.400	0.28	5.35	1.74	7.37
Egypt - - - -	11.200	12.50	1.34	—	13.84
France - - - -	39.300	23.57	10.46	6.65	40.68
Germany - - - -	60.600	17.23	3.69	4.57	25.49
Italy - - - -	33.700	7.66	1.23	4.76	13.65
Japan - - - -	52.300	1.83	1.04	1.98	4.85
Mexico - - - -	13.600	3.44	4.18	3.76	11.38
Netherlands - - - -	5.700	7.67	9.37	8.87	25.91
Portugal - - - -	5.400	1.59	6.19	11.33	19.11
Roumania - - - -	6.700	2.79	0.03	5.10	7.92
Russia - - - -	143.400	6.40	0.54	—	6.94
Siam - - - -	6.100	0.02	7.37	0.34	7.73
Spain - - - -	19.600	4.48	8.86	5.05	18.39
Turkey - - - -	24.000	5.50	1.14	—	6.64
China - - - -	330.100	—	1.06	—	1.06

## **I. ARBITRAGE IN BULLION AND COINS.**



## A. GOLD.

THE majority of “the most advanced and energetic nations” have placed their currency on a gold basis, that is, have accepted a gold standard.

The basis of the

### ENGLISH CURRENCY

is the pound sterling,<sup>1</sup> divided into 20 shillings of 12d. each = 240 pence.

The quantity of gold which represented the pound sterling has been changed several times in the past. In the days of Edward III (1334) when the first gold coins<sup>2</sup> were used, 1 pound of standard gold, which was then nearly  $\frac{995}{1000}$  fine (995 parts of gold and 5 parts of alloy), was valued at £15. Later on, the number of pounds sterling minted from 1 pound of gold increased, until it was fixed in 1718 at the present standard, according to which **1 pound of standard gold has to be coined into  $46\frac{29}{40}$  sovereigns, or 1860 sovereigns from 40 pounds Troy.**

The gold standard (fineness of gold) has also undergone different changes, until it was fixed in the reign of Henry VIII (1509-1547). This standard, which is still in

<sup>1</sup> Originally synonymous with “pure standard”. In the middle of the thirteenth century there circulated in England an enormous amount of base coin. Some German coiners then famous for the purity of the coins they produced were called to England. These coiners were named “*Easterling*” and the coins themselves “*Sterling*”.

<sup>2</sup> The Noble.

force, prescribes that all gold coins must contain **22 carats pure gold and 2 carats of alloy—out of a mixture weighing 24 carats,**

and is therefore equal to a fineness of

$$\frac{22}{24} = \frac{11}{12} = \frac{11}{12} \times 83\frac{1}{3} = \frac{916\frac{2}{3}}{1000}.$$

Gold and silver are weighed by the Troy weight, and the Troy ounce must not be confused with the ounce of ordinary retail business.

175 pounds Troy equal 144 pounds Avoirdupois; the pound Troy is divided into 12 ounces Troy. 1 oz. = 20 pennyweights, 1 dwt. = 24 grains, so that 1 pound Troy = 5760 grains, while the usual pound (Avoirdupois) contains 7000 grains.

As 40 pounds Troy = 480 oz. Troy = £1869 = 37,380s.;  
 $1 \text{ oz.} = \frac{37,380}{480} = 77\cdot875 \text{ s.} = 77 \text{ s. } 10\frac{1}{2} \text{ d.}$

**The fixed Mint price of gold is therefore 77s. 10½d. per ounce Troy.**

The weight of 1 sovereign is

$$\frac{40 \times 5760 \text{ grains}}{1869} = 123\cdot27447 \text{ grains,}$$

and the least current weight still considered as legal tender, 122.50000 grains, therefore difference 0.77447 grains, or about  $\frac{5}{8}\%$ , which difference explains why new sovereigns in New York are valued 1 cent higher than old ones.

The weight of 1000 sovereigns is therefore 256.822 oz., and the legal tender limit of 1000 sovereigns is 255.208 oz., but the Bank of England rarely delivers 1000 sovereigns with a smaller weight than 256.20 oz., or with a difference of  $\frac{1}{4}\%$ . The remedy of weight permitted to the Mint for each sovereign is 0.2 grains, or  $1\cdot6\%$ .

Light gold coins are received by the Bank of England on behalf of the Mint at their full nominal value.

As 1 oz. = 31.1 grammes, the **legal weight of 1000**

sovereigns is  $256.822 \text{ oz.} \times 31.1 = 7988$  grammes, or kilog. 7.988, and they contain

$$7.988 \times \frac{11}{12} = \text{kilog. 7.3223 pure gold.}$$

Notwithstanding that the greatest care is taken in the minting of coins, it is almost impossible to get either the exact weight of pure metal, or the full weight prescribed by law quite accurately. In order to cover any difference, the Mints are allowed a certain weight, called "**remedy**" (in France "**tolérance**"), which is expressed in thousandths.

Continental Mints are generally permitted a remedy of:—

2% for the full weight and }  
 1%,, pure weight } of gold coins,  
 and from 2 to 3% for the pure weight and }  
 ,, 3,, 10%,, full weight } of silver coins.

Nearly all the gold and silver shipped to Europe passes through London, which has become in consequence the chief bullion market of the world.

The Bank of England practically controls and regulates it by its rate of discount. Excessive withdrawals of gold from the Bank are immediately checked by raising that rate, as a higher rate means deduction of a larger amount for discount, thereby diminishing the cash value of the bills. The price of cheque London in the various money markets will then rise, and thereby reduce the margin of a gold import from London.

The English Mint makes **no charges** for coinage, but delivers the coins only a fortnight after receipt of the gold, whilst the Bank of England pays for its gold purchases immediately at 77s. 9d. per oz.

The Bank consequently offers 1½d. per oz. less than the Mint, which corresponds to a money rate of 4% for 14 days, for the ounce value.

The Mint accepts **every** quantity of gold for coinage, while the Bank of England requires:—

(1) That the bars are re-melted by the smelters appointed by the Bank in bars of 400 oz. (melting charge  $\frac{1}{4}$ d. per oz., or 8s. 6d. per bar).

(2) That the bars are assayed at the expense of the Bank.

The standard ounce contains gold of a fineness of  $\frac{11}{12}$ , and its value is fixed at 77s. 10 $\frac{1}{2}$ d. (or in decimals 77.875); the ounce of **pure** gold (gold without any alloy is considered as the unit =  $\frac{1000}{1000}$  fine) would therefore cost  $\frac{1}{11}$  more  $(\frac{11}{12} + \frac{1}{12} = \frac{12}{12}) = 84.95s. = 84s. 11\frac{1}{2}d.$ , or very near 85s.

If we, therefore, compare the price of 1 oz. of pure gold in England with the price of 1 oz. of pure gold in other countries, we arrive at the Mint parity price of the various foreign coins.

We prefer, however, to take the kilogramme—1000 grammes—as weight basis, and to compare the price of 1 kilog. of pure gold in England with the price of 1 kilog. pure gold abroad, as the weight of nearly all foreign coins is expressed in grammes.

The actual rate—the “exchange”—may not be exactly the Mint parity price, as it depends upon the state of the imports and exports of the country. Sometimes the foreign country by its trade finds itself a debtor, sometimes a creditor, of England. However, the Mint parity price can regulate the price of the foreign money through gold shipments.

To simplify calculations which will appear further on, we will find out the value of 1 kilog. gold; first the value of 1 kilog. standard gold, and then the value of 1 kilog. pure gold.

We have the following equations:—

Sovereigns  $x$  = 1 kilog. standard gold.  
 Kilog. 1 = 2.204621 lb. Avoirdupois.  
 lb. Avoirdp. 144 = 175 lb. Troy.  
 lb. Troy 40 = 1869 sovereigns;

and find  $x = 125.1869$ . We note therefore :—

$$\begin{array}{l}
 (1) \ 1 \text{ kilog. standard gold} = \text{£}125.1869 = 2503.74\text{s. and} \\
 1 \text{ kilog. pure gold} = \text{£}125.1869 \\
 \text{plus } \frac{1}{11} = 11.3806 \\
 \hline
 \text{£}136.5675
 \end{array}$$

(2) 1 kilog. pure gold = £136.5675 = 2731.35s.,  
 1 gramme of standard gold is, therefore, equal to 2.50374s.,  
 and 1 gramme of pure gold equal to 2.73135s.

At the price 77s. 9d. per oz. (purchase price fixed by the Bank of England), the value of :—

$$\begin{array}{l}
 1 \text{ kilog. standard gold works out at £}124.98593, \text{ and} \\
 1 \text{ kilog. pure gold } " " 136.34859
 \end{array}$$

The Bank of England buys and sells foreign gold coins per oz. **full weight** at fluctuating prices. Generally the Bank pays 76s. 5d. per oz. for coins 0.9 fine, and sells them at 76s. 9d. The difference of 4d. is equal to  $\frac{7}{16}\%$ .

For reasons already stated, it may suit the Bank to increase the gold stock, and to prevent its reduction. This purpose can be realized :—

- (1) By raising the rate of discount.
- (2) By raising the price for purchase and sale of the foreign gold coins.

We will now examine the money of the various countries :—

## FRANCE.

The present currency is a creation of the year 1795, **the franc at 100 centimes is its basis.** Originally all coins were minted 0.9 fine; but since 1866 all subsidiary

silver coins (fr. 2, fr. 1, fr.  $\frac{1}{2}$ ) are only 0·835 fine. The franc piece weighs 5 grammes, and, therefore, contains  $5 \times 0\cdot835 = 4\cdot175$  grammes of pure silver.

From 1 kilog. (1000 grammes) of gold, 0·9 fine, there are minted 155 20-franc pieces. The weight of 1 20-franc piece is, therefore,  $\frac{1000}{155} = 6\cdot45161$  grammes. The value of 1 kilog. 0·9 gold (called "Mint gold") is, therefore,  $155 \times 20 = \text{fr. } 3\cdot100$ , and the value of 1 kilog. pure gold  $= 3100 + \frac{3100}{9} = \text{fr. } 3444\cdot444$ .

The 5-franc piece in silver, which like the 5-franc piece in gold, is no longer coined, weighs 25 grammes, and is 0·9 fine; hence it contains  $25 \times 0\cdot9 = 22\cdot5$  grammes of pure silver. From 1 kilog. "Mint silver" (silver 0·9 fine) there were minted 40 5-franc pieces ( $40 \times 25 = 1000$  grammes), and its value was, therefore,  $40 \times 5 = \text{fr. } 200$ . Hence both metals found the following valuation: The kilog. Mint gold (0·9 fine) was (and is still) valued at fr. 3·100, while the kilog. Mint silver (0·9 fine) was valued at fr. 200, that is to say that the proportion between gold and silver was as  $3100:200$ , or gold was valued  $15\frac{1}{2}$  times higher than silver.

As England coins from 1 kilog. pure gold, £136·5675, and France coins from 1 kilog. pure gold fr. 3444·44, we arrive at the equation:—

$$\text{fr. } 3444\cdot44 = \text{£136}\cdot5675$$

$$\text{or fr. } 25\cdot22 = \text{£1}$$

$$\text{and fr. } 1 = 9\frac{1}{2}\text{d.}$$

The parity of £1 = fr. 25·22 is the **theoretical** Mint parity, but it does not take into consideration the charges of the French Mint for exchanging gold, nor the tariff fixed for the purchase of foreign coins. When we consider these items, we shall find the **practical** Mint parity, which for the English sovereign will lead to the following result:—

The French Mint charges fr. 6.70 expenses for 1 kilog. gold, that brings the price of 1 kilog.  $\frac{900}{1000}$  fine gold down to fr. 3093.30, and the price of 1 kilog. pure gold to fr.  $3093.30 + \frac{3093.30}{9} = \text{fr. 3437}$ . The English sovereign which is minted  $\frac{916\frac{2}{3}}{1000}$  fine, is taken by the French Mint as only  $\frac{916}{1000}$  fine, and 1000 sovereigns would according to the tariff of the French Mint contain only (see page 13) kilog.  $7.988 \times \frac{916}{1000} =$  kilog. 7.317 pure gold at fr. 3437 = fr. 25148.53, or

$$1 \text{ sovereign} = \text{fr. 25.15.}$$

**The practical Mint parity of the sovereign therefore is fr. 25.15.**

In a similar way there can be established the practical Mint parity of the other foreign gold coins.

The Bank of France likewise buys gold at the price of fr. 3437 for 1 kilog. pure gold, and pays immediately for its purchases, while the Mint pays only after the examination of the gold (after 6 to 8 days according to its quantity) with a "bon de monnaie"—draft on the Treasury—which however does not authorize a payment of gold exclusively.

Fully admitting the difficult position of the Bank of France in defending the gold standard (on account of the very large amount of 5-franc pieces in silver in circulation), it is incomprehensible that the Treasury should reserve for itself the right to pay for the purchased gold, either with gold or with silver, since the purchased gold does not reduce the stock of gold. On the other hand, it is easy to explain why the Bank of France at times charges a small premium on 20-franc pieces, which the arbitrage wishes to export.

The **Bank of France** pays for 1 kilog. full weight of :—

20-mark pieces, eagles, Dutch		
10-florin pieces, Austrian,		
Scandinavian crowns, Rus-		
sian imperials (new), and		
yens - - - - -		Fr. 3090.5504
Russian imperials (old) and		
Turkish pounds - - - - -	,,	3144.855
Sovereigns - - - - -	,,	3149.6668
Austrian ducats - - - - -	,,	3385.445

The Bank of France grants advances of 95 % of the approximate value of the gold bars and foreign gold coins at 1 % per annum, but always debits interest for at least 36 days.

As already stated, the Bank of England rarely delivers 1000 sovereigns with a smaller weight than 256.2 oz. =  $256.2 \times 31.1$  grammes = 7967.8 grammes, or one sovereign weighing 7.967 grammes; 125.51 sovereigns would therefore weigh 1000 grammes ( $\frac{1000 \text{ grammes}}{7.967}$ ), and as the Bank of France pays fr. 3149.6668 for 1 kilog. sovereigns (125.51 sovereigns), 1 sovereign according to that tariff would fetch fr. 25.095 ( $\frac{3149.6668}{125.51}$ ), a price which is  $5\frac{1}{2}$  centimes lower than the price which the French Mint is prepared to pay.

Similar calculations will show that the tariff of the Bank of France is less favourable than the tariff of the French Mint.

Gold bars which are offered to the Bank of France must weigh at least 6 kilog., and must be 0.996 fine.

In the open market in Paris pure gold can sometimes be sold at a higher price than the above-mentioned price of fr. 3437.

In case gold should be shipped to France, the expenses of freight, insurance, interest on the money concerned,

brokerages for the sale of gold and the purchase of the remittance, would have to be taken into consideration, and as these amount to about  $\frac{1}{3}\%$ , the parity would be 25.22 less  $\frac{1}{3}\% = 25.22 - (25.22 \times \frac{1}{3}) = 25.22 - 0.08 = 25.14$ .

In case gold should be shipped from Paris to London, the expenses would be the same, and the parity then  $25.22 + 0.08 = 25.30$ .

The two prices **25.14** and **25.30** consequently indicate the limits (also called "gold points") beyond which gold shipments between London and Paris would commence to pay.

The appearance, fineness, and weight of the gold coins issued by France, Belgium, Italy, Switzerland, and Greece—which countries form the "Union latine"—are identical.

The gold coins of Bulgaria, Roumania, Servia, and Spain—which countries have adopted the monetary system of the "Union latine" without joining it—circulate in France as equal to the corresponding French coins.

While in former years the Mint work of France and her colonies was divided between eighteen establishments, the Republic has to-day only one single Mint, which, therefore, is sometimes very busy.

## GERMANY.

(1 mark = 100 pfennige.)

The German Mint coins 1 kilog. **pure** gold into  
139½ twenty-mark pieces

or 279 ten     ,     ,

1 kilog. pure gold in Germany therefore equals marks 2790, and we have, as before, the equation

marks 2790 = £136.5675

or **marks 20.43 = £1.**

**mark I = 11½d.**

As the German gold coins are minted  $\frac{900}{1000}$  fine, and 1 kilog. **pure** gold can be transformed into 1111.111 grammes of gold  $\frac{900}{1000}$  fine, 2790 marks or 139½ twenty-mark pieces must weigh 1111.11 grammes, or 1 twenty-mark piece  $\frac{1111.11}{1395} = 7.965$  grammes.

The gold content of 1 twenty-mark piece is therefore

$$7.965 \text{ grammes} \times 0.9 = 7.1685 \text{ grammes.}$$

Gold coins which have lost through a long circulation a half per cent. of their normal weight are withdrawn at the expense of the Empire. The allowable weight of the 20-mark piece is therefore 7.925 fr.

The German Mints (six in number, established in Berlin, Hamburg, Carlsruhe, Munich, Stuttgart and Freiberg in Saxony) charge 6 marks for coining 1 kilog. pure gold.

As in England and France, gold bars and foreign gold coins can be disposed of in Germany at the Reichsbank (Bank of Germany) and some of its branches, and at the Mints. The Reichsbank pays for its purchases immediately, while the Mints exchange the gold brought to them for German coins only after some days, according to the amount of business on hand. Consequently there will always occur a loss of interest, which has to be taken into account. But in most cases the calculation will show that it is preferable to sell the gold direct to the Reichsbank instead of to the Mints.

The German Mints accept gold bars and foreign gold coins at the fixed rate of

M. 2790 per 1 kilog. pure gold, and debit

„ 6 for coinage fee.

M. 2784, of which is to be deducted 1% remedy, i.e.

„ 2.784, so that the Mints pay

**M. 2781.216** for 1 kilog. pure gold.

**The Reichsbank buys :—**

(a) Gold coins at their full weight per kilog. at the following tariff :—

Sovereigns and Russian imperials

( $\frac{11}{12}$  fine) - - - - M. 2551.536

Russian imperials (new, 0.9 fine) ,, 2505.043

Eagles - - - - - ,, 2505.60

Dutch 10-florin pieces - - - - ,, 2505.3216

20-franc pieces from countries

forming the "Union," Roumanian 20-lei pieces, Austrian old 8-florin pieces, Scandinavian crowns, Argentine gold

pesos - - - - ,, 2504.208

10- and 5-franc pieces from coun-

tries forming the "Union" - ,, 2503.958

Egyptian pound pieces - - - ,, 2435.7216

Yens and Austrian 20-crown pieces ,, 2505.3216

Gold pesos (Chilian after 1895) - ,, 2549.8656

Austrian ducats - - - - ,, 2741.554

Turkish pounds - - - - ,, 2547.36

Spanish Alphonsd'or (excluding

Alphons XIII) - - - - ,, 2498.64

(b) Gold bars weighing at least  $2\frac{1}{2}$  kilog. and 0.9 fine.

The Bank pays immediately M. 2784 per kilog., provided the bars are examined by a German Mint; otherwise three marks are charged per bar for examination, and an advance of 90 % of the approximate value is granted, which has to be taken into account at the definite settlement.

The gold points for gold shipments from London to Berlin would be the cheque price of 20.43, less 0.07 expenses = 20.36, and for gold shipments from Berlin to London the cheque price of 20.50.

## UNITED STATES OF AMERICA.

(1 dollar = 100 cents.)

Before the foundation of the Republic, European coins, especially those of Spain, circulated in North America. During the War of Independence coins were very scarce, and so much needed, that tobacco and other articles of daily life were used as money. When Congress was called together in the year 1792, one of its first measures was the creation of a proper currency. A Mint was established, and dollars in gold and silver coined, the ratio of both metals fixed at 15 : 1. In the year 1837 that ratio was increased to 16 : 1. In the following years the monetary system underwent several changes.

In the year 1900 the dollar in gold was proclaimed as the basis of the currency, but the dollar in silver remained legal tender. No limit was fixed to the coinage of gold, and the coinage of silver was restricted to the money of the Treasury.

All the coined money is 0·9 fine, the weight of \$1 in gold is 1·6718 grammes = 25·8 grains; consequently 1000 half-eagle pieces (\$5) weigh kilog. 8·359. They contain  $8\cdot359 \times 0\cdot9$  = kilog. 7·523 pure gold at £136·5675 = £1027·4, therefore the equation—

$$\begin{aligned} \$5000 &= \text{£}1027\cdot4 \\ \text{or } \$4\cdot8666 &= \text{£}1. \\ \$1 &= 49\cdot316d. \end{aligned}$$

The five American Mints at Philadelphia, San Francisco, Carson, Denver and New Orleans, as well as the assay offices at New York, Boise, Charlotte, Deadwood, Helena, Seattle and St. Louis exchange gold on the basis of \$800 for 43 oz. gold 0·9 fine = \$800 for 38·7 oz. pure gold. The counter value of the gold is generally paid for in cash (not

by cheque) on the third day after the "deposit".<sup>1</sup> **No charge** for minting is made, and only a fee of one dollar for any deposit demanded.

Consequently there is paid—

\$20.67183 for 1 oz. pure gold.

\$18.60465 for 1 oz. Mint gold.

The Mints also always sell gold bars (0.990—0.998 fine) for \$800.40 for 38.7 oz. pure gold.

As \$1 in gold weighs 1.6718 grammes, and is 0.9 fine, it contains 1.50462 grammes pure gold. The value of 1 kilog. pure gold is therefore  $\frac{1000}{1.50462} = \$664.6144$ .

As the value of 1 kilog. pure gold is fixed—

In England,                   at           £136.5675

In France,                   „           Fr. 3444.444

In the United States „           \$664.6144,

it follows that these amounts must be equal among themselves, and that

£1 = \$4.8666, \$1 = Fr. 5.1826, M. 400 = \$95.286.

We on purpose mention these parities, as the European newspapers report every morning the New York prices of cheques on London, Paris, and Berlin of the previous day. As "gold points" between London and New York may be taken, the cable prices 4.8570 and 4.8762. (For the coinage of silver dollars, see the chapter "Silver".)

## AUSTRIA-HUNGARY.

(1 krone = 100 heller.)

1 kilog. pure gold is coined into 3280 kronen  $\frac{900}{1000}$  fine; therefore the equation

kronen 3280 = £136.5675

or **kronen 24.02 = £1**

**krone 1 = 10d.**

<sup>1</sup> Legally the American Mints must not appear as "buyer" of gold, but only as its "depositary".

As in the foregoing paragraph, "Germany," we have 1 kilog. pure gold = 1111.11 grammes of gold  $\frac{900}{1000}$  fine = 3280 kronen = 164 pieces of 20 kronen, or the weight of 1 twenty-kronen piece =  $\frac{1111.11 \text{ grammes}}{164}$  = 6.775 grammes.

The purest gold coin in the world is the **Austrian ducat**, which deserves mention on that account. It is coined 986 $\frac{1}{9}$  fine, containing only 13 $\frac{8}{9}$  alloy, and 3.4424 grammes fine gold, which, at 2.7313s. the gramme, would make the English par, 9.4s., and the Austrian par, kronen 11.29. It does not circulate in the Empire, and is merely issued to help the commerce in the East.

Prior to the introduction of the new gold standard, Austria-Hungary had a mixed currency, based on silver and paper. Gold coins were also issued, commanding always a premium against the currency money. They were rarely seen in the Empire, and circulated mostly abroad. The weight of the old "8-florins piece," which was made legal tender for gold florins 8.10, was grammes 6.45, and its fineness  $\frac{900}{1000}$ , it represented consequently the French 20-franc piece, and circulated as such in France. This coin, containing grammes 5.806 pure gold, made the price of 1 kilog. pure gold equal to gold florins 1395,<sup>1</sup> according to  $\frac{8.1 \times 1000}{5.806}$ , and as kilog. 1 pure gold in the new currency is taken as kronen 3280, we arrive at the equation :—

Old gold florins 1395 = kronen 3280, or

Gold florin 1 = , , 2.35, or as

2 kronen were fixed equal to florin 1 of the old currency, we may read the equation also :—

Gold florin 1 = old currency florins 1.175, or

Gold florins 100 = , , florins 117.5,

<sup>1</sup> As 1 kilog. pure silver was then coined into 90 florins, the old French ratio between gold and silver of 15 $\frac{1}{2}$  : 1 (1395 : 90), and a double standard, were thereby established.

showing a depreciation of the old currency to the extent of  $17\frac{1}{2}\%$ .

The Government, therefore, perpetuated by the new standard a gold premium of  $17\frac{1}{2}\%$ , which was really paid for years. For the purpose of converting gold florins into the new currency—as such was necessary for the carrying out of contracts stipulated in gold florins—the Government declared gold florins 42 equal to kronen 100, thereby fixing the gold florin equal to kronen 2.38, instead of 2.35. These two prices show accordingly a difference of more than  $1\%$ , which is in favour of the payee of contracts.

Only amounts up to kronen 50 in silver are legal tender. As gold points the cheque prices **23.92** and **24.12** may be taken; at the former, gold may be transferred from London to Vienna, and at the latter from Vienna to London.

The unit of the currency, the krone (crown), is represented by a silver coin which is an exact copy of the franc. It weighs like it 5 grammes, and is 0.835 fine; contains therefore likewise 4.175 grammes pure silver.

The remedy which is permitted to the two Mints (Vienna and Kremnitz) is fixed at:—

1	per mille for the fineness	} of gold coins.
2	„ „ „ full weight	
3	„ „ „ fineness	} of silver coins.
10	„ „ „ full weight	

The Vienna Mint accepts gold bars and gold coins for minting 20-kronen pieces or ducats at the price of k. 3274 for 1 kilog. pure gold (k. 3280 minus k. 6 coinage charge). Gold bars below a fineness of 0.898 are subject to a payment of k. 4 per kilog.; k. 2 is charged for the assay of every bar. The Vienna Mint like the Bank of Austria-Hungary buys foreign coins at their full weight, but as the Mint prices are lower than the prices of the Bank, the

arbitrager will prefer to deal with the Bank only. It is, therefore, of no practical value to quote the Mint tariff. That price difference can only be explained by the Bank's intention to acquire a large stock of gold. Probably, for the same reason, the Bank pays k. 3278 for gold bars per 1 kilog. fine, that is k. 4 more than the Mint. The Bank can afford to pay that price, as it itself is charged only k. 2 per kilog. by the Mint.

**The Bank of Austria-Hungary** has fixed the following tariff for the purchase of gold coins (per 1000 grammes full weight):—

German and new Russian coins	-	k. 2947·45
English and old Russian	-	3002·1538
Coins of the "Union latine"	-	2951
Scandinavian and Argentine coins		2946·4673
Alphonsd'or (excl. Alphons XIII)		2935·916
Austrian ducats	-	3230·1406
American coins	-	2946
Dutch and Japanese coins	-	2947·7776
Turkish pounds	-	2997·2402
Egyptian pounds	-	2861·8858

According to that tariff, the bank pays k. 3002·1538 for 1 kilog. sovereigns, i.e. for 125·51 sovereigns (see p. 18), or k. 23·92 for each sovereign ( $\frac{3002\cdot1538}{125\cdot51}$ ).

## RUSSIA.

(1 rouble = 100 kopecks.)

The value of the "new imperial" is fixed at 15 roubles. Its weight is 12·9039 grammes, and contains, as it is 0·9 fine,  $12\cdot9039 \times 0\cdot9 = 11\cdot6135$  grammes pure gold.

1 rouble, therefore, equals  $\frac{11\cdot6135}{15} = 0\cdot77423$  grammes pure gold, which at 2·7313s. corresponds to 2·11465s.

or **25<sup>3</sup>d.** in English money, and fixes the value of **£1** at **roubles 9·458** in Russian money.

The value of **1 kilog.** pure gold in Russia is fixed at  $\frac{1000}{0.77423} = \text{roubles } 1291\cdot6$ . The new 5-rouble piece contains exactly 87·12 doli pure gold which equals 3·87117 grammes, as 1 Russian pound = 409·5124 grammes = 96 solotnik and 1 solotnik = 96 doli.

The weight and fineness of the "imperial" has undergone several changes during the last few decades. It contained originally 13·088 grammes  $\frac{916\frac{2}{3}}{1000}$  fine gold, then 12·902 grammes pure gold, coined  $\frac{900}{1000}$  fine (the half of the latter being consequently exactly like the French 20-franc piece), and it represented 10 roubles in gold, which commanded a very high and sometimes wildly fluctuating premium against the rouble in paper, then also called "credit rouble" (rouble based on the credit of the Russian Government). The par value of the gold rouble of former years being 38·05d.—6·451 grammes  $\frac{900}{1000}$  fine = 5·8059 grammes pure gold at 2·7313s. = 15·856s. for 5 roubles, or 1 rouble = 38·05d.—showed at times as much as 73% premium against the paper rouble, as the latter was obtainable at 22d., making 100 gold roubles equal to 173 paper roubles.

During the last thirty years gold maintained a premium of 50%, that is 100 gold roubles were equal to 150 paper roubles.

In order to find a way out of that deplorable chaos, and to put the currency on a solid basis, the Government adopted in the year 1899 the present standard, which makes the value of the gold rouble and paper rouble perfectly equal. It was therefore necessary to lower the value of the old gold rouble, and to raise the value of the old paper rouble. The value of the old "imperial" which was formerly fixed at 10 roubles, was declared equal to

15 roubles, and the old half-imperial, up till then representing 5 roubles, to be worth  $7\frac{1}{2}$  roubles. By that declaration, changing the value of the rouble, making

$$\begin{array}{l} 10 \text{ old gold roubles} = 15 \text{ new roubles} \\ \text{or } 100 \text{ } \text{,} \text{,} \text{,} \text{,} \text{,} = 150 \text{ } \text{,} \text{,} \text{,} \text{,} \text{,} \end{array}$$

the Government perpetuated the former premium of 50 % on gold. The old half-imperial—5-rouble piece—minted after the model of the French 20-franc piece, is now valued at roubles  $7\frac{1}{2}$ ; making thereby **roubles**  $7\frac{1}{2}$  = **fr. 20** or

$$\text{rouble 1} = \text{fr. } 2\cdot666.$$

In former years Russia coined platina into 6-rouble and 3-rouble pieces, also called "Platina Ducats," but these are already demonetized. These 6-rouble pieces were coined without any alloy, and were therefore pure platina; their weight was 20.7066 grammes. At that time the rouble was represented by 1.2 grammes pure gold. 6 roubles in gold corresponded then to 7.2 grammes gold, which were equal to 20.7066 grammes platina; gold was therefore then nearly 3 times dearer than platina, while to-day platina is dearer than gold. The value of 1 oz. pure gold is fixed at 85 shillings, and the price of 1 oz. pure platina is now 105 shillings.

The **Bank of Russia** and some of its branches buy:—

(a) **Gold bars** on the basis of R. 1290.3 per 1 kilog. pure gold, deducting 1 rouble as assay fee (the Bank pays R. 528.39669 for 1 Russian pound).

(b) **Gold coins** (per 1000 grammes full weight) according to the following tariff:—

Coins of the "Union" of Germany, Austria-Hungary, Holland, Scandinavia, United States, Argentina and

Japan	-	-	-	-	at R. 1160.95605
Sovereigns	-	-	-	„ „	1182.43965
Turkish pounds	-	-	-	„ „	1180.63095
Alphonsd'or	-	-	-	„ „	1158.69825

The Bank pays for coins immediately, for bars only after some weeks, but is prepared to grant an advance of 90 % of their value. Gold to be sent to St. Petersburg may be addressed to the Customs at Wirballen (frontier). The Bank, duly informed by telegraph about the arrival of the gold in Russia, arranges for its free carriage from Wirballen to St. Petersburg, and puts its value to the credit of the sender the very day of its arrival in Russia.

Taking the average weight of 125·51 sovereigns as 1 kilog., the Bank tariff fixes the value of 1 sovereign at R. 9·421 ( $\frac{1182\cdot43965}{125\cdot51}$ ), while we found the intrinsic value of a newly coined sovereign at R. 9·458.

The **Mint** accepts gold (in bars and coins) for coinage into imperials and half-imperials, and charges **2 per mille**; the Mint debits, namely, a fee of R. 42·315 per pud gold. (1 pud = 40 pounds at 409·5125 grammes = 16,380·5 grammes at R. 1291·6 = R. 21,156·4, of which 2 % = R. 42·315.)

## FINLAND.

(1 markka = 100 penni.)

This Russian province has hitherto retained its own currency, but this will soon be substituted by the Russian.

1 kilog.  $\frac{900}{1000}$  fine gold is coined into 3100 markkaa in 20- and 10-markkaa pieces, which have accordingly exactly the value of the French 20- and 10-franc pieces, and therefore

**markkaa 25·22 = £1**

**markka 1 = 9½d.**

Until the definite introduction of the Russian currency, 1 rouble will be valued at  $2\frac{2}{3}$  markkaa, and only amounts up to 10 roubles in silver are legal tender.

## NETHERLANDS.

(1 guilder = florin = 100 cents.)

1 kilog. pure gold is coined into florins 1653·44, therefore the equation :—

$$\begin{aligned} \text{florins } 1653\cdot44 &= \text{£}136\cdot5675. \\ \text{or florins } 12\cdot107 &= \text{£}1 \\ \text{florin } 1 &= 19\cdot82\text{d. or nearly } 1\text{s. } 8\text{d.} \end{aligned}$$

As the Dutch Mint at Utrecht charges florins 5 for the coinage of 1000 grammes pure gold, that is about 3 %, the practical parity comes to  $12\cdot107 - 0\cdot037 = 12\cdot07$ , and the gold points for shipments of gold from London to Amsterdam would be the cheque price 12·03, and for gold shipments from Amsterdam to London the cheque price 12·15.

As the Dutch gold coins are minted  $\frac{900}{1000}$  fine, and 1 kilog. pure gold corresponds to 1111·11 grammes gold  $\frac{900}{1000}$  fine, we have the weight of florins, 1653·44, or 165·344 ten-florin pieces = 1111·11 grammes, or 1 ten-florin piece = 6·72 grammes.

The “**Ducat**” and “**double Ducat**” are still minted for use in the Dutch East Indies. The ducat weighs 3·494 grammes, and as it is  $\frac{983}{1000}$  fine, it contains 3·4346 grammes pure gold which, at florins 1·653 the gramme, makes the Dutch par, florins 5·67, and the English par, at 2·7313s. the gramme, 9·38s.

The **Bank of the Netherlands** buys gold bars—not weighing more than  $6\frac{1}{2}$  kilog.—at florins 1648 per kilog., and sells it at florins 1653. The Bank buys further :—

French, American, and German gold coins	as	0·8995	fine.
Scandinavian gold coins	-	-	„ 0·899 „
Old imperials and sovereigns	-	-	„ 0·916 „

Greek, Roumanian, Servian, and Spanish gold coins are paid for only after melting.

The exchange which corresponds to the Bank tariff is 12.0672 according to the following calculation :—

$$\begin{aligned}
 \text{florins } x &= 1 \text{ sovereign} \\
 125.51 &= 1000 \text{ grammes full weight} \\
 1000 &= 916 \text{ grammes pure gold} \\
 1000 &= 1653.44 \text{ florins,}
 \end{aligned}$$

while the Mint pays for a newly coined sovereign fl. 12.107

less fee of 3 %	,,	0.0363
		fl. 12.0707

Formerly the florin was divided into 20 stuivers, making the stuiver equal to 5 cents; this we mention as the Amsterdam rate of exchange in London is still expressed in florins and stuivers.

## SCANDINAVIA.

(DENMARK, SWEDEN AND NORWAY.)

(1 krone = 100 ore.)

According to the monetary convention of these three countries, 1 kilog. pure gold is coined into 2480 kronen, therefore the equation :—

$$\begin{aligned}
 \text{kronen } 2480 &= £136.5675 = 2731.35s. \\
 \text{or kronen } 18.16 &= £1. \\
 \text{kronen } 1 &= 1s. 1\frac{1}{4}d.
 \end{aligned}$$

Another way of finding that parity would be the comparison of Scandinavian money with German money. As in Germany 1 kilog. pure gold is coined into 2790 marks, and in Scandinavia into 2480 kronen, we have the equation :—

marks 2790 = kronen 2480, or divided by 31,

„ 9 = „ 8

„  $1\frac{1}{8}$  = krone 1

As we found the parity of mark 1 =  $11\frac{3}{4}$ d. (see page 19), therefore 1 krone =  $11\cdot75 + \frac{11\cdot75}{8} = 11\cdot75 + 1\cdot47$ d. = 13.22d. = 1s.  $1\frac{1}{4}$ d.

As gold points may be taken the cheque prices **18.10** and **18.22**.

Only amounts below 20 kronen in silver are legal tender.

## JAPAN.

(1 yen = 100 sen = 1000 rin.)

According to the new gold standard, introduced in 1897,

**1 kilog. pure gold** is coined into **1333 $\frac{1}{2}$  yen**, or

1 yen =  $\frac{1000}{1333\frac{1}{2}}$  grammes =  $\frac{3\cdot000}{4\cdot000} = \frac{3}{4}$  grammme

pure gold, which at 2.73135s. the gramme, makes the value of

**1 yen = 2.048s. = 2s. 0 $\frac{9}{16}$ d.**

**£1 = 9.763 yens.**

The gold coins are minted  $\frac{900}{1000}$  fine, and the weight of the 10-yen piece must accordingly be:—

$\frac{3}{4} \times 10 \times \frac{10}{9} = \frac{300}{36} = \frac{100}{12} = 8\cdot3333$  grammes.

The former 10-yen piece (before 1897) contained just twice as much **pure** gold (15 grammes) as the present one ( $7\frac{1}{2}$  grammes).

The reason which led the Japanese Government to that radical reform of the currency was the following:—

Concurrently with the issue of gold coins, Japan minted silver yens of the weight of 416 grains  $\frac{900}{1000}$  fine. Each silver yen, therefore, contained 374.4 grains (= 24.26 grammes) pure silver.

One gold yen of the former type contained  $1\frac{1}{2}$  grammes of pure gold, and 1 silver yen of the former type contained 24.26 grammes of pure silver ; the ratio between silver and gold was consequently :—

$$\begin{aligned} & 24.26 : 1\frac{1}{2} \\ \text{or } & 48.52 : 3 \\ \text{or } & 16.17 : 1 \end{aligned}$$

The depreciation of silver naturally began soon to tell against this low ratio between gold and silver. Gold was driven out of Japan, and heavy fluctuations in the rate of exchange took place. The Japanese Government therefore resolved to declare **1 old gold yen equal to 2 new yens**, thereby bringing the ratio between silver and gold to **32.34 : 1**.

Since the establishment of the new gold standard the prices of agricultural produce have shown a rising tendency, whilst those of all imported goods have gone down.

Japan has no coin representing the yen, as only 20-, 10-, and 5-yen pieces in gold (0.9 fine), and 50-, 20-, and 10-sen pieces in silver (0.8 fine) are minted ; the latter are legal tender only up to 10 yens. Japan reduced, in June, 1906, the weight of its silver coins ; the 50-sen piece, formerly of a weight of 13.4783 grammes, weighs now only 10.125 grammes.

## EGYPT.

The present currency dates from the year 1885, its unit is the **piastre**, which is represented by a silver coin weighing 1.4 grammes and  $\frac{5}{6}$  (0.833) fine. It is subdivided in 10 "Ockr-el-gersch," while formerly the subsidiary coin was called "para," and 40 paras were equal to 1 piastre.

The gold coins are pieces of 5, 10, 20, 50, or 100 piastres,

the latter also named "pound" or "lira," all minted on the basis of 0·085 grammes, 0·875 ( $\frac{7}{8}$ ) fine, per piastre.

The **Egyptian pound** weighs therefore 8·5 grammes, and contains  $8\cdot5 \times \frac{7}{8} = 7\cdot4375$  grammes pure gold, which, calculated at 2·7313s. value **20·314s.** = **243·768d.**,

or **1 piastre** = **2·43768d.**

and **£1** = **98·45 piastres.**

The gramme pure gold in Egyptian money is worth  $\frac{100}{7\cdot4375} = 13\cdot4453$  piastres.

500 piastres are called as in Turkey "bourse".

The gold standard of Egypt is not a pure one, as the Government fixed the value of the foreign coins, and decreed a tariff according to which must be accepted:—

1 sovereign = 97·50 piastres

1 20-franc piece = 77·15 , ,

1 Turkish pound = 87·75 , ,

The tariff does not fix a price for the 20-mark piece, which generally is taken at piastres 95·50.

A comparison of the intrinsic value of these coins with the tariff price shows that the latter is fixed 1 to  $1\frac{1}{4}\%$ . too low.

The 20-franc piece contains 5·806449 grammes pure gold, which at piastres 13·4453 should value piastres 78·07, while the tariff fixes its price at piastres 77·15.

That under-valuation of the foreign coins can only be explained by the expenses connected with their possible recoinage at a European Mint, since Egypt possesses no coining establishment.

The **gold points** between London and Alexandria are expressed by the equation  $97\cdot50 \pm 0\cdot35 = 97\cdot85$  or **97·15**.

If cheque London quotes in Alexandria below 97·15, then sovereigns will be imported from London, and if above 97·85, then sovereigns will be shipped to London.

The silver coins issued before the year 1885 are still in circulation, but are valued at half of the new (tariff) piastres.

Silver coins are legal tender up to an amount of 200 piastres, and nickel coins up to 10 piastres.

## URUGUAY.

(1 peso = 100 centavos.)

The Mint issues 10-peso pieces weighing 16.97 grammes gold,  $\frac{11}{12}$  fine, which at 2.5037s. the gramme makes the value of

1 peso = 4.249s. = 50.988d., or nearly 51d.

£1 = 4.707 pesos.

Montevideo quotes at the present moment bills on London at the parity of 51.34d. per peso (that is above Mint parity); this price indicates a great demand for pesos in consequence of a trade balance in favour of Uruguay.

As in the case of Egypt (see above), the gold standard of Uruguay is not pure, for the Government has likewise decreed a tariff for the foreign money, according to which :—

1 sovereign	= 4.70 p.	Argentine pesos 5	= 4.66 p.
Fr. 20	= 3.73 p.	Eagle	1 = 9.66 p.
Marks 20	= 4.60 p.		

## TURKEY.

The present monetary system was introduced in the reign of the Sultan Abdul-Medjid, in the year 1844.

The unit of the currency is **the piastre**, which is subdivided into 40 paras or 100 cents.

The gold coins are the pieces of 500 piastres (also called "bourse"), 250 piastres, 100 piastres (known as "pound")

or "lira" or "gold medjidié"), 50 and 25 piastres—all on the basis of 0.072164 grammes  $\frac{11}{12}$  fine (= **0.06615 grammes pure gold**) per piastre. The latter is worth therefore 2.168d. ( $0.072164 \times 30.044$ ), and the **Turkish pound**

$$216.8d. = 18s. 0\frac{3}{4}d.$$

$$\text{and } \mathbf{\text{£1}} = \mathbf{\text{£T. 1.107.}}$$

A great number of foreign coins circulate in Turkey, especially Austrian ducats and Russian imperials. According to the equation  $\mathbf{\text{£T1}} = 18.067s.$ , their value in Turkish money should be the following :—

Austrian ducats: English par 9.4s. (see p. 24), therefore Turkish equivalent  $\frac{940}{18.067} = \text{piastres } 52.03$ .

Russian  $7\frac{1}{2}$ -rouble piece: 1 rouble = 2.1144s. (see page 26), therefore Turkish par  $\frac{7.5 \times 2.1144 \times 100}{18.067} = \text{piastres } 87.77$ ; but generally the ducat is quoted below, and the imperial above these figures.

The value of the Austrian 20-kronen piece in Turkish money would be  $\frac{6.0975}{0.06615} = \text{piastres } 92.18$ .

As we find piastres  $87.77 = 7\frac{1}{2}$  roubles = fr. 20, and piastres  $92.18 = \text{Austrian kronen } 20$ , piastres 100 must be equal to fr. 22.78 and kronen 21.70.

We mention this on purpose, as Constantinople quotes bills on London for £1 English, and bills on Paris and Vienna for £1 Turkish (100 piastres).

## PORTUGAL.

(1 milreis = 1000 reis.)

Portugal adopted the gold standard in the year 1854, and was for many years its only supporter on the Continent. It could not be maintained, and a deterioration of the finances of the country in the year 1891 led to an involuntary paper currency. Gold now commands a

premium (about 11 %), and paper takes even the place of subsidiary coins.

The unit of the monetary system is called "reis," and the crown or 10-milreis piece (= 10\$ 000 reis) weighs 17.735 grammes,  $\frac{11}{12}$  fine, which at 2.5037s. the gramme makes its value = 44.4s., or

$$1 \text{ milreis in gold} = 4.44s. = 53.28d.$$

$$4\frac{1}{2} \text{ milr. gold} = \text{£1.}$$

1 gold reis is therefore about  $\frac{1}{19}$ d.

1000 milreis are called "conto of reis" and 1000 contos = 1 million milreis = "conto de contos".

Portugal proposes to effect a complete change of her monetary system. The "cruzado" will be the new unit, and equal to 0.7094 grammes pure gold. It will be divided into 100 ceitils. Gold pieces at 5, 10, and 20 cruzados will be coined  $\frac{11}{12}$  fine.

The English parity of the cruzado will then be  $0.7094 \times 2.73135s. = 1.9376s.$

## ARGENTINE REPUBLIC.

(1 peso or dollar = 100 centavos.)

In the year 1881, Argentine introduced the gold standard which could only be kept in force until the year 1885, when a paper currency took its place. The unit of the Argentine currency is the peso, a silver coin of 25 grammes weight, and of a fineness of 0.9. It is therefore an exact copy of the French 5-franc piece. The gold coins are the 5-peso piece ("Argentino"), and the  $2\frac{1}{2}$ -peso piece ("Medio Argentino"). The Argentino weighs 8.064 grammes, and is coined 0.9 fine. It therefore contains  $8.064 \times 0.9 = 7.2576$  pure gold, with a value of 19.823s. = 237.88d., which makes the value of 1 gold peso = 47.576d.

We note therefore :—

$$\$1 = 47\frac{9}{16}\text{d.}$$

$$\text{£1} = \$5.04.$$

The gold content of the theoretical gold peso would be  $\frac{7.2576}{5} = 1.4515$  grammes, i.e. exactly the same as of the French 5-franc piece in gold. The Argentine monetary system was therefore originally a copy of the French one, and the ratio between gold and silver was similar to the French, i.e.  $1:15\frac{1}{2}$ .

The gold value of the paper peso or paper dollar formerly fluctuated heavily. To put a stop to these fluctuations the Government resolved, in the year 1899, to convert the paper money on the basis of

$$1 \text{ paper dollar} = 44 \text{ gold centavos},$$

and in consequence of that measure the **premium on gold** remained stationary at **127.2727%**, its parity price.

Namely, 44 gold centavos at a gold premium of 127.2727 correspond to 1 paper dollar ( $0.44 \times 227.2727 = 1$ ), or in the form of chain rule, we have the following equations :—

$$\begin{aligned} \text{paper \$ } x &= 100 \text{ gold \$} \\ 1 &= 100 \text{ gold centavos} \\ 44 &= 1 \text{ paper \$} \\ \hline x &= 227.2727 \end{aligned}$$

(For the establishment of a “Caja de Conversion,” see p. 135.)

At the Mint parity of 47.58d. of the theoretical gold dollar, the fixed price of the **paper dollar** is **20.935d.** ( $47.58 \times 0.44$ ).

Should the premium on gold rise for some unforeseen reason (which, however, is not likely, as Argentine now commands an important stock of gold), the gold value

of the paper dollar can be found by the following method :—

Assuming a gold premium of 135 %, the English value of the paper dollar would be 20d., according to the following chain rule :—

$$\begin{array}{r}
 \text{pence } x = \$1 \text{ paper} \\
 235 = \$100 \text{ gold} \\
 1 = 47.58 \text{ pence} \\
 \hline
 x = 20 \text{d.}
 \end{array}$$

Should the price of the paper dollar rise, for instance to 22d., we would find the corresponding gold premium by the following equations :—

$$\begin{array}{r}
 \$1 \text{ paper} = \$100 \text{ gold} \\
 1 = 47.58 \text{d.} \\
 22 = \$1 \text{ paper} \\
 \hline
 x = 216.27,
 \end{array}$$

or gold premium = 116.27 %.

Sometimes gold is also quoted per ounce in paper dollars, or the price of sovereigns is given in paper dollars ; either of these quotations is sufficient to find the exchange on Argentina.

In the first case we have to ascertain the fineness of the gold, and by a simple comparison of the price with 77s. 10½d. (the London price of 1 oz. standard gold), we are able to establish the exchange parity ; in the second case we have to divide the sovereign price by 5.04 (the parity value of £1) and to subtract 100 ; for instance, the price of the sovereign would be given with \$ paper 11.45, the gold premium would then be  $\frac{11.45}{5.04} - 100 = 227.18 - 100 = 127.18$ .

(For gold shipments to Argentine, see p. 137.)

## BRAZIL.

(1 milreis = 1000 reis.)

The monetary system of Brazil resembles that of Portugal in many points. As in Portugal, the gold standard could not be maintained, and a paper currency had to take its place. Only the deterioration of the currency was much quicker than in Portugal on account of the rapid increase in note circulation.

The unit of the Brazilian currency is called (as in Portugal) reis, only its value is far below the Portuguese reis (1/67d.).

The 20-milreis piece in gold weighs 17.929 grammes,  $\frac{11}{12}$  fine, which at 2.5037s. per gramme makes its value 44.89s. or

**1 milreis in gold = 2.244s. = 26.93d.**

**£1 = 8.912 reis in gold.**

The Brazilian silver coins are likewise  $\frac{11}{12}$  fine, and the 2-milreis piece weighs 25 $\frac{1}{2}$  grammes.

Heavy fluctuations of the foreign exchanges (over 100% within a few years) caused the formation of a "Caixa de Conversão," on the model of the Argentine "Caja de Conversion" (see p. 135). The Government, in December, 1906, fixed the price of the currency milreis at **15d.**, and resolved to exchange up to £20,000,000 gold for currency milreis on the basis of 16 milreis to the sovereign. The price of the **currency milreis** at **15d.** corresponds to a premium on gold of 79%, according to the following calculation:—

Currency milreis  $x$  = 100 milreis gold

1 = 26.93d.

15 = 1 curr. milr.

Should the acquired stock of gold reach £20,000,000,

the intentions of the Government are to raise then the price of the currency milreis to 16d., in which case the premium on gold would amount to 68 %.

## MEXICO.

That republic had up to the year 1905 a pure silver standard, which, in consequence of the fluctuating and falling silver price, and on account of the considerable liabilities in gold, was a heavy burden to the country. Interest and capital of loans amounting in January, 1904, to £30,000,000 had to be paid in gold. The legislature, therefore, adopted on the 29th November, 1904, a new currency involving a **double standard**.

The unit of the new currency remains as before, the dollar, which is minted in silver and gold. **The silver dollar is equal to half a gold dollar**, and can be tendered for **50 cents** for all payments to be made to the Government.

The new currency, therefore, fixes the value of

$$\begin{aligned} 1 \text{ gold dollar} &= 2 \text{ silver dollars,} \\ \text{or } 100 \text{ gold dollars} &= 200 \text{ silver dollars,} \end{aligned}$$

i.e. it established a gold premium of 100 per cent.

The gold content of the new gold dollar is 1.5 grammes (the old gold dollar contained only 1.4805 grammes pure gold), while the silver content of the silver dollar remained unchanged, i.e. at 24.44 grammes.

The **silver dollar** therefore corresponds to  $\frac{1.5}{2} = 0.75$  grammes pure gold, and to the value of the **yen**.

The ratio between gold and silver was therefore raised to  $1 : 32.5855$  ( $0.75 : 24.44$ ).

The English parity of the new gold dollar is  $1.5 \times 2.73135s. = 4.097s.$ , and the English parity of the **silver dollar**  $\frac{4.097}{2} = 2.0485s.$  ( $24\frac{9}{16}d.$ ).

Mexico coins from 1 kilog. pure gold:

$$\frac{1.000}{1.5} = \$666.666, \text{ while}$$

the United States coin \$664.614 from the same quantity of metal; the United States gold dollar is therefore rather more valuable than the Mexican gold dollar.

As there are dollars in silver and gold current, mistakes in the use of the word "dollar" are possible, and in order to avoid them, it is customary to call the silver dollar "peso" (\$), and to speak of the gold dollar as "\$ gold".

Mexico was very fortunate in the establishment of the new currency, as a quite unexpected rise in the price of silver in the year 1906 permitted the sale of 100,000,000 pesos and the coinage of 50,000,000 gold dollars. Mexico received  $\frac{4}{5}$  gramme pure gold for each peso, while its present metal value is only 0.6 gramme. The coinage of 50,000,000 gold dollars would to-day require the sale of 125,000,000 pesos, i.e. 25,000,000 pesos more than Mexico actually used.

The Government laid a duty of 27 per cent. on the import of pesos (the duty amounts to \$10 per kilog. pesos). By that high duty, Mexico keeps off the many million pesos which circulate in the Far East. The peso can be bought at present in China at 21d., while its exchange value in Mexico is fixed at 24.56d. But as the import duty amounts to 6.63d. per peso, every peso shipped to Mexico would leave a loss of over 3d., not even considering shipping expenses.

The new currency works perfectly, the foreign exchanges quote at their Mint parities, and thanks to that stability, a large amount of foreign capital is now invested in Mexican undertakings.

## GOLD BARS.

The fineness of gold bars is expressed in thousandths and the tenth thereof (millesimal system). The present gold standard, as already mentioned several times, is  $\frac{11}{12}$  fine =  $\frac{916\frac{2}{3}}{1000}$ , that is 1000 parts in weight contain  $916\frac{2}{3}$  parts of gold and  $83\frac{1}{3}$  parts of alloy. The expression for pure gold as unit is therefore  $\frac{1000}{1000}$ .

Formerly the fineness of bars was differently described. It was given in carats and grains, and marked "B" (better) or "W" (worse), together with the number of carats and grains the fineness exceeded or fell short of the standard.

The grain itself was the fourth part of an ideal weight called "carat," which must not be confused with the jewellery carat.  $\frac{24}{24}$  was then taken as the expressions for pure gold, and the English gold standard, which is  $\frac{11}{12}$  equal to  $\frac{22}{24}$ .

India quotes pure gold still as 24 carats gold.

The mark "B2, O" was therefore equal to  $\frac{22}{24} + \frac{2}{24} = 1\frac{1000}{1000}$ , and the mark "O 1 $\frac{5}{8}$  W" equal to

$$\frac{22 - \frac{15}{8}}{24} = \frac{88 - 1\frac{5}{8}}{96} = \frac{86}{96} = \frac{691}{768} = \frac{899.735}{1000} \text{ or nearly } \frac{900}{1000}.$$

Gold bars appearing in international commerce weigh generally 400 oz. Troy (about 12 $\frac{1}{2}$  kilog.), and are 0.996 fine. The fineness of the gold shipped from Africa varies from 0.700 up to 0.900. London refines the African gold, and melts it into the usual bars.

As already stated gold bars may be used for payments in every centre of the commercial world. A comparison of the foreign quotations for gold bars requires a knowledge of the price of cheque London in the various cities, and a

parity may then be established according to the following examples :—

### PARIS.

Gold fr. 3437—cheque London fr. 25·20.

s.  $x$  = 1 oz. standard

12 = 11 oz. pure

1 = 31·1 grammes pure

1000 = 3437 fr.

25·2 = 20s.

$$\underline{x = 77\cdot76 = 77s: 9\frac{1}{8}d.}$$

### BERLIN.

Gold m. 2790—cheque London m. 20·45.

s.  $x$  = 1 oz. standard

12 = 11 oz. pure

1 = 31·1 grammes pure

1000 = 2790 m.

20·45 = 20s.

$$\underline{x = 77\cdot79 = 77s. 9\frac{1}{2}d.}$$

### NEW YORK.

Gold \$800—cheque London \$4·87.

s.  $x$  = 1 oz. standard

12 = 11 oz. pure

9 = 10 oz. Mint gold

43 = \$800

4·87 = 20s.

$$\underline{x = 77\cdot8 = 77s. 9\frac{5}{8}d.}$$

## VIENNA.

Gold k. 3280—cheque London 24.

s.  $x$  = 1 oz. standard

12 = 11 oz. pure

1 = 31.1 grammes pure

1000 = 3280 k.

24 = 20s.

$$x = 77.92 = 77s. 11\frac{1}{16}d.$$


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## AMSTERDAM.

Gold fl. 1653—cheque London 12.14.

s.  $x$  = 1 oz. standard

12 = 11 oz. pure

1 = 31.1 grammes pure

1000 = 1653 fl.

12.14 = 20s.

$$x = 77.63 = 77s. 7\frac{1}{2}d.$$


---

We see from these calculations that the price of cheque London appears as divisor. Hence, the higher its price, the lower the price of the gold bars, and the lower the quotation for cheque London, the higher the price of the gold. Therefore to make gold imports from the above-mentioned cities profitable, a high price for cheque London would be necessary. A high price of cheque London in any country would mean a temporary indebtedness of the country in question, and a demand for remittances to London; hence the possibility of choosing gold bars as remittance.

The brokerage for gold bars is  $\frac{1}{4}$ d. per oz. standard (about 1/4  $\%$ ).

---

### NOTES FOR PRACTICAL PURPOSES.

	=	2·679·227 lb. Troy.
1 kilogramme (1000 grammes).	=	2·204·621 lb. Avoirdupois.
	=	32·150·725 oz. Troy.
	=	15·432·349 grains Troy.
1 ounce Troy	=	31·103·496 (31·1035) grammes.
1 kilog. standard gold	=	£125·1869 = 2503·74s.
1 kilog. pure gold	=	£136·5675 = 2731·35s.
1 gramme standard gold	=	2·5037s. = 30·044d.
1 gramme pure gold	=	2·73135s. = 32·7762d.

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LEGAL WEIGHT, CONTENT OF GOLD  
AND PARITY

—CALCULATED AT 77s. 10½d. THE OZ. STANDARD GOLD—  
OF 1000 NEWLY COINED:

	Fineness in thousandth.	Full weight in kilog.	Content of pure gold in kilog.	Parity in £.
Austrian ducats - -	986½	3.4908	3.4424	470.12
Brazilian 20-milreis pieces		17.929	16.435	2244.48
Portuguese crown (10 milreis) - - -		17.735	16.257	2220.18
English sovereigns - -	916½	{ 7.988 (256.82 oz.)	{ 7.3223 (235.42 oz.)	1000 —
Indian mohurs - - -		{ 11.664 (375 oz.)	{ 10.692 (343.75 oz.)	1460.18
Turkish medjidié (pound)-		7.216	6.6146	903.34
Russian old half-imperial-		6.545	5.999	819.27
Danish 20-kronen pieces -		8.960	8.064	1101.28
United States half-eagles (\$5) - - -		{ 8.359 (268.75 oz.)	{ 7.523 (241.875 oz.)	1027.40
Japanese 10-yen pieces -		8.333	7.4997	1024.22
German 20-mark " -		7.965	7.1685	978.98
Austrian 20-kronen pieces- -		6.775	6.0975	832.72
Dutch 10-florin " -		6.720	6.048	825.96
Belgian 20-franc " -				
Finnish 20-markkaa " -				
French 20-franc " -	900			
Greek 20-drachme " -				
Italian 20-lire " -				
Persian 20-kran " -		6.452	5.8068	793.02
Roumanian 20-leü " -				
Russian 7½-rouble " -				
Servian 20-dinar " -				
Spanish 20-peseta " -				
Swiss 20-franc " -				
Egyptian pounds - -	875	8.500	7.4375	1015.72

The figures given in the preceding table show the **theoretical** parity, as no account is taken of the remedy (page 13).

While the **coinage of gold** in **England** and the **United States** is executed **free**, the coinage fees amount to :—

$1\frac{13}{16}$  per mille in Austria-Hungary.

$1\frac{15}{16}$	,	France.
2	,	Russia.
$2\frac{1}{2}$	,	Denmark, Sweden, and Norway.
3	,	Holland.
$3\frac{3}{16}$	,	Germany.
7	,	Japan.
10	,	India and Turkey.

When arbitrage operations in coins are contemplated with countries where two different tariffs are in force (tariff of the note-issuing banks on the basis of the full weight of the coins, and tariff of the Mints on the basis of the fineness of the coins), it must be first examined which of the two tariffs is the more profitable.

Let us take as an example a shipment of 1000 sovereigns from London to Germany, and their disposal there. The German Mint would pay for 7322.3 grammes (pure gold content of 1000 sovereigns) at m. 2.781216 (see p. 20) = m. 20.364.90; the Reichsbank would pay 7988 grammes (full weight of 1000 sovereigns) at m. 2.551.536 (see p. 21) = m. 20.381.67. A sale to the Reichsbank is consequently preferable to a sale to the Mint. Moreover, the bank pays immediately, while the Mint only settles after a few days, which means a loss of interest.

The Bank of England buys and sells foreign coins—if they are in stock—per oz. full weight at **fluctuating** prices, the usual buying price for coins 0.9 fine is 76s. 5d. per oz., and their selling price 76s. 9d.

For reasons already stated (p. 13) it may suit the bank at times to attract the gold, and to prevent its withdrawal, which object is attained :—

- (a) By raising the rate of discount, and
- (b) By raising the purchase and selling price of foreign coins.

A selling price of 76s. 9d. would correspond to 19s. 7½d. for the 20-mark piece, according to the following calculation :—

$$\begin{aligned}
 \text{s. } x &= \text{one 20-m. piece} \\
 1 &= 7.965 \text{ grammes full weight} \\
 31.1 &= 1 \text{ oz.} \\
 1 &= 76.75 \text{s.} \\
 \hline
 x &= \underline{\underline{19.6563 \text{s.}}}
 \end{aligned}$$

That selling price is equal to the price of m. 20·35 for cheque London in Berlin, according to the following equation :—

$$\begin{aligned}
 \text{m. } x &= \text{£1} \\
 1 &= 20 \text{s.} \\
 19.6563 &= 20 \text{ m.} \\
 \hline
 x &= \underline{\underline{20.35}}
 \end{aligned}$$

The same selling price fixes the value of one 20-franc piece at 15s. 11d., so we have :—

$$\begin{aligned}
 \text{s. } x &= \text{one 20-franc piece} \\
 1 &= 6.45161 \text{ grammes full weight.} \\
 31.1 &= 1 \text{ oz. full weight.} \\
 1 &= 76.75 \text{s.} \\
 \hline
 \end{aligned}$$

That price of 15s. 11d. corresponds to :—

1. The Paris price of 25·123 for cheque London.
2. The Berlin price of 81·319 for cheque Paris = according to the following equations :—

$$\begin{aligned}
 \text{fr. } x &= \text{£1} \\
 1 &= 20 \text{s.} \\
 15.9215 &= 20 \text{ fr.} \\
 \hline
 \end{aligned}$$

M.  $x$  = 100 fr.

20 = 15.9215s.

20 = 20.43 m.

---

The exceptional price of 76s. 6d. which the Bank of England sometimes allows for the ounce of United States gold coins corresponds to the value of £1 = \$4.86.38, so we have:—

\$  $x$  = £1

1 = 20s.

76.5 = 1 oz. coins full weight.

268.75 = \$5.000

---

Similar calculations can be made for all the coins bought and sold by the Bank of England.

TABLE  
FOR CALCULATING FOREIGN MONEY,  
BASED ON THE MINT PAR.

To be bound between pages 50 and 55.

## TABLE FOR CALCULATING FOREIGN

1 kilog. pure gold in :	England.	United States.	Germany.	France and Union latine.
is coined into :	£136·5675	\$664·6144	m. 2790	fr. 3444·444
consequently £1 =	1	4·8666	20·43	25·22
\$1 =	49·316d.	1	4·1979	5·1826
m. 1 =	11·75d.	23·82c.	1	1·2345
fr. 1 =	9·516d.	19·295c.	81 pf.	1
fl. 1 =	19·82d.	40·195c.	1·6874	2·0831
rouble 1 =	25·37d.	51·45c.	2·1598	2·666
Aust. k. 1 =	10d.	20·26c.	85·06 pf.	1·05
Scand. k. 1 =	13·212.	26·80c.	1·125	1·388
rupee 1 =	16d.	32·443c.	1·362	1·6813
yen 1 =	24·576d.	49·85c.	2·0925	2·5833

For instance, to convert French money into Japanese money, meet the vertical column "Japan," from which we see fr. 1 = 1.

To convert Japanese money into French money, we use the column "France," from which we see yen 1 = fr. 2·5833.

## MONEY, BASED ON THE MINT PAR.

Holland.	Russia.	Austria-Hungary.	Scandinavia.	India.	Japan.
1653·44	r. 1291·6	k. 3280.	k. 2480.	m. 93·5293 curr. rup. = 2048·512.	y. 1333·333
1·107	9·4575	24·02	18·16	15	9·765
2·4878	1·9434	4·9351	3·7314	3·0822	2·006
0·5926	0·463	1·1756	0·888	0·7342	0·4778
0·48	0·3749	0·9522	0·72	0·5947	0·38706
1	0·7811	1·9837	1·499	1·2387	0·80639
1·28	1	2·5391	1·9199	1·5856	1·032177
0·5041	0·3938	1	0·75609	0·622	0·4065
0·666	0·5208	1·3225	1	0·8257	0·5376
0·8071	0·6305	1·6013	1·211	1	0·651
1·23959	0·9687	2·46	1·86	1·536	1

we use the horizontal column "franc 1," and follow it till we  
0·38706.

horizontal column "yen 1," and follow it till we meet the vertical

The preceding table can also be used for comparing English money with the money of all foreign countries which have adopted a gold or double standard, and for comparing the money of such nations with each other.

For instance, we may compare :—

(1) English money with United States, German, French, and Austrian money, and see from the table :—

$$\begin{aligned}\text{£1} &= \$4.8666 = \text{m. } 20.43 = \text{fr. } 25.22 \\ &= \text{k. } 24.02.\end{aligned}$$

(2) United States money with German, French, Austrian, and Japanese money, and the table indicates :—

$$\begin{aligned}\$1 &= \text{m. } 4.1979 = \text{fr. } 5.1826 = \text{k. } 4.9351 \\ &= \text{yens } 2.006.\end{aligned}$$

Of course, all these equivalents represent only the Mint pars, and the actual value of the foreign units may differ from it, for reasons already explained on page 14.

## B. SILVER.

The most important silver markets are in Amsterdam, Bombay, Calcutta, Hamburg, Hong-Kong, London, New York, Paris, and Shanghai.

**Amsterdam** quotes the price of 1 kilog. pure silver in guilders.

**Hamburg** is the only German market which deals in silver per 1 kilog. fine.

**New York** quotes silver for 1 oz. fine in cents.

**Paris** quotes silver likewise for 1000 grammes fine, but we should like to repeat that the French Mint has since 1878 suspended the purchases of silver at a fixed rate.

In former years, before the depreciation of silver, the French Mint paid francs 200 for 1 kilog. silver  $\frac{900}{1000}$  fine, equal to fr. 222.22 for  $\frac{1000}{1000}$  = pure silver, and charged fr. 3.33 for expenses, which brought the price down to **fr. 218.89**. This price was used **until lately** as a quotation basis, and silver was dealt in with so much per cent loss (say, for instance, 55 % loss) against it.

In countries where gold and silver concurrently were once legal tender, pure gold was generally worth  $15\frac{1}{2}$  times its weight in silver. At that time 1 oz. standard silver was valued at 60 $\frac{7}{8}$ d. The value of 1 oz. **pure** silver was therefore

$$60\frac{7}{8} \times \frac{1000}{925} = 65.81\text{d.},$$

and as the value of 1 oz. **pure** gold is 84.95s. (page 14), or 1019.4d., the proportion between gold and silver stood  $1019.4 : 65.81$  or  $15\frac{1}{2} : 1$ .

The French quotation of silver shows that proportion at a glance.

1 kilog. gold  $\frac{900}{1000}$  fine was always valued at fr. 3100, and 1 „ „ silver „ „ was formerly valued at fr. 200, the ratio between the two metals was therefore 3100 : 200 or  $15\frac{1}{2} : 1$ .

At the actual silver price of 24d. the oz. standard,

1 kilog. pure silver values 69·51s. (page 57), and 1 „ „ gold „ „ 2731·3s. (page 15)

at the price of 77s. 10 $\frac{1}{2}$ d. the oz. standard gold, the ratio between gold and silver is therefore **at present** 2731·3s. : 69·515s., or **39·3 : 1**.

London has always been the chief European silver market where the metal is dealt in by ounce standard. But that ounce standard silver must not be confused with the oz. standard gold, as the silver standard is different from the gold standard. While the latter is  $\frac{11}{12} = \frac{916\frac{2}{3}}{1000}$ , the silver standard is  $\frac{925}{1000}$  fine.

The present **English** silver standard was legalized by Act of Parliament in 1817. According to it:—

**One pound Troy standard silver (12 oz.) must contain 11 oz. 2 dwt. pure silver, and must be coined into 66 shillings.**

This proportion of silver and alloy was fixed by Edward I in 1279, at which time 1 oz. standard silver was coined into 20 shillings only.

The silver standard is therefore:—

$\frac{11\frac{2}{5}}{12} = \frac{11\frac{1}{5}}{12} = \frac{111}{120} = \frac{37}{40} = \frac{925}{1000}$ , and the silver value of one shilling =  $\frac{1}{66}$  of the price for 1 lb. standard silver; or at the **present price of 24d. per oz.** =  $\frac{24 \times 12}{66} = 4\cdot36d.$ , and the under value amounts in consequence to 7·64d. or to nearly 64 %.

As 1 pound of silver can actually be bought at 24s., the Mint makes a profit of  $66 - 24 = 42$ s. per pound, or 175 %.

This profit of the Mint is called “**seigniorage**,” but it must be borne in mind that in Great Britain silver is not legal tender for more than 40s.

The value of 1 kilog. standard silver at 24d. per oz. is 64·3s. (2·679 lb. Troy = 1 kilog. and the Troy lb. = 24s.) and the value of 1 kilog. **pure silver** at 24d. per standard oz. = 69·51s.  $(64\cdot3 \times \frac{1000}{925})$ .

As 1 pound Troy standard silver (12 oz.) is coined into 66s., they contain  $12 \times 31\cdot1$  grammes  $\times 0\cdot925 = 345\cdot21$  grammes pure silver, and 1 **shilling** contains  $\frac{345\cdot21}{66} = 5\cdot23$  grammes pure silver.

The **mark** contains 5 grammes pure silver which represent, at the present Hamburg silver quotation of m. 70, a value of 35 pfennig. The circulation value is therefore 65 pf. above the metal value. As 1000 grammes pure silver at present cost m. 70, and the Mint coins the same into 200 1-mark pieces, Germany makes a profit of m. 130 per kilog. silver, or of 185 %. But in Germany, as in England, silver coins are limited legal tender up to m. 20 only.<sup>1</sup>

The **franc** weighs 5 grammes, and is coined 0·835 fine, therefore contains 4·175 grammes pure silver, which at the Paris price of fr. 88 corresponds to 36·74 centimes.

The **Austrian crown** is an exact copy of the franc; its intrinsic value is therefore identical with the 1-franc piece.

The **5-franc piece in silver** weighs 25 grammes, and is coined 0·9 fine, therefore contains 22·5 grammes fine silver, which at the Paris price of fr. 88 equals fr. 1·98. The fixing of the intrinsic value of the 5-franc piece is interesting for

<sup>1</sup> The taler pieces—now withdrawn from circulation—were *unlimited* legal tender for m. 3, and contained 16 $\frac{2}{3}$  grammes pure silver.

two reasons ; firstly, because of its exceptional position on the money market. For it is legal tender for any amount within the " Union latine," and therefore circulates everywhere as the equivalent of fr. 5 in gold.

Secondly, the various South American States have a silver coin, bearing different names, as : boliviano, dollar, gourde, peso, piastre, sol, sucre, venezolano, which are all minted after the type of the French 5-franc piece.

To find the ratio between gold and silver, we may employ the following equations :—

$$\text{oz. pure silver } x = 1 \text{ oz. pure gold}$$

$$1 = 84.95\text{s.}$$

$$1 = 12\text{d.}$$

$$\text{London price} = 1 \text{ oz. standard silver}$$

$$\underline{1000 = 925 \text{ oz. pure silver}}$$

$$x = \frac{943}{\text{London silver price}}$$

At the price of 25d. for the oz. standard silver, the said ratio would be  $\frac{943}{25} = 37.72 : 1$ .

To establish the parity of the **London silver price** with the **Paris price**, we use the following rule :—

$$\text{fr. } x = 1000 \text{ gr. pure silver}$$

$$31.1 = 1 \text{ oz. } \quad \text{,} \quad \text{,}$$

$$925 = 1000 \text{ oz. standard silver}$$

$$1 = \text{London price in pence}$$

$$\underline{240 = \text{Price cheque London in fr.}}$$

$$x = \frac{\text{London price} \times \text{cheque}}{6.9042}$$

The London silver price of 25d. at the simultaneous cheque price 25.20 would correspond to the Paris silver price 91.24  $\left( \frac{25 \times 25.2}{6.9042} \right)$ .

## THE RUPEE.

(1 rupee = 16 annas = 64 pice.)

(1 lac = 100,000 rupees.)

(1 crore = 100 lacs = 1,00,00,000.)

The rupee has by far the widest circulation of all the silver coins in the world; it is the coin of the largest and most populous part of the world—of Asia proper, and of some parts of Africa.

Its weight is  $\frac{3}{8}$  oz. Troy (= 180 grains = 1 tola) with a fineness of  $\frac{11}{12} = \frac{916\frac{2}{3}}{1000}$ ; its **intrinsic** value, therefore, is at the present silver price of 24d. per oz. standard, **8.92d.** (according to  $24 \times \frac{916\frac{2}{3}}{925} = 23.78$ , or  $24 \times \left(\frac{\frac{11}{12}}{\frac{37}{40}}\right) = 23.78$ , of which  $\frac{3}{8} = 8.92$ ).

India quotes the price of silver in rupees for 100 tolas silver, which is  $\frac{998}{1000}$  fine.

**To find the Indian equivalent of a London silver price,** we employ the following equations :—

rupees  $x = 100$  tolas silver

$1 = \frac{3}{8}$  oz.

$1000 = 998$  oz. fine.

$925 = 1000$  oz. London standard

$1 = 24$ d. (London price)

$16 = 1$  rupee

---

$x = 60.69$

The operations with the fixed figures lead to the final figure **2.528**, which, multiplied by the London price, gives the parity, or more shortly :  $\frac{\text{London price} \times 10}{4} + 1\%$  of quotient; in the above example :  $\frac{24 \times 10}{4} = 60$ , and  $60$  plus  $1\% = 60 + 0.60 = 60.60$ .

**To establish the London parity of an Indian silver quotation, we have the following chain :—**

$$\begin{aligned}
 \text{pence } x &= 1 \text{ oz. standard silver} \\
 1000 &= 925 \text{ oz. fine} \\
 998 &= 1000 \text{ oz. full weight} \\
 \frac{8}{10} &= 1 \text{ tola} \\
 100 &= 60 \text{ rupees (price)} \\
 1 &= 16d. \\
 \hline
 x &= 23.73
 \end{aligned}$$

The operations with the fixed figures lead to the final figure **0.39545**, which multiplied by the Indian price gives the parity, or more shortly : **Indian price  $\times \frac{4}{10}$  less 1 %.**; in the present example :  $60 \times \frac{4}{10} = 24$ , and 24 less 1 %. ( $0.24$ ) = 23.76.

**In the year 1893, the Indian Government suspended the coinage of silver for the public, and, in 1897, declared the British sovereign legal tender for 15 rupees, thereby fixing the value of the rupee at  $\frac{240}{15} = 16d.$ , and the value of 1 anna at 1d.**

The Government has through that measure adopted a "limping standard," which has put an immediate stop to a further depreciation of the rupee, and prevented considerable fluctuations of the Indian exchange rate. Holland took a similar step sixteen years previously—in 1877—with regard to the currency of her possessions in the East Indies.

In the year 1894, the Indian Government laid a duty of 5 % on the import of silver, which duty was raised to 4d. per ounce fine silver, on 25 February, 1910.

The Indian Mints (Bombay and Calcutta) which remain open for the coinage of gold, charge 1 % expenses.

The "mohur"—India's gold coin—valued formerly at

15 rupees, is exactly the weight and fineness of the rupee, that is  $\frac{3}{8}$  oz.  $\frac{11}{12}$  fine, and its par value therefore  $\frac{3}{8} \times 77.875$ s., = 29.203s., which amount can at present be exchanged for 21.9 rupees (at 16d. the rupee). The Mint issues also 5-rupee ( $\frac{1}{2}$  mohur), 10-rupee ( $\frac{2}{3}$  mohur), and 30-rupee (double mohur) pieces in gold.

In former years, when 1 mohur equalled 15 currency rupees, gold was then worth 15 times its weight in silver, as both coins are of the same weight and metal purity; the ratio between gold and silver was then 1:15. To-day, that ratio stands at 1:39.3, as the intrinsic silver value of the rupee is 8.92d., and the intrinsic gold value of the mohur, 29.2s., or 350.4d.

The fixing of the rupee value at 16d. made the value of the mohur (15 rupees in gold), as before said, 21.9 currency rupees, or 1 gold rupee equal to 1.46 currency rupee, or 100 gold rupees = 146 currency rupees. The Government, therefore, perpetuated through its measure a premium on gold of 46%.

### THE MEXICAN DOLLAR (PESO).

The silver coin which has the next largest circulation after the rupee is the Mexican dollar, in which form Mexico used to send the output of its rich silver mines into the world.

Its weight varies according to the issuing place, as there were several Mints in Mexico.

Legally it should weigh 417.8 grains, and should be  $\frac{9027}{10000}$  fine,<sup>1</sup> and therefore contain 377.14 grains of pure silver, but its average weight is only 416.5 grains, its average fineness only  $\frac{898}{1000}$ , and its average content of pure

<sup>1</sup> Exactly  $\frac{9}{10}$  fine.

metal rarely more than 374 grains, which corresponds to 404.32 grains of English standard silver ( $374 \times \frac{40}{37}$ ). We note therefore:—

### I MEXICAN DOLLAR

**Average full weight:—**

$$416.5 \text{ grains} = 0.8677 \text{ oz.} = 27 \text{ grammes.}$$

**Average content of**

**pure silver:—**

$$374 \text{ , , } = 0.7791 \text{ , , } = 24.24 \text{ , , }$$

**Average content of**

**English standard**

**silver:—**

$$404.32 \text{ , , } = 0.8423 \text{ , , } = 26.20 \text{ , , }$$

We find the **intrinsic value** of the Mexican dollar by the following equations:—

$$\text{pence } x = \$1$$

$$1 = 0.8423 \text{ oz. English standard}$$

$$1 = 24d. \text{ (present price of 1 oz. standard silver)}$$

$$\underline{x = 20.22d.}$$

or more shortly, **London silver price minus 16% of the silver price** (in the above case,  $24 - 3.84 = 20.16d.$ ).

To establish the **value of 1 oz. Mexican dollars** we employ the following equations:—

$$\text{pence } x = 1 \text{ oz. Mexican dollars.}$$

$$868 = \$1000 \text{ Mexican}$$

$$1000 = 842.3 \text{ oz. standard}$$

$$1 = 24d. \text{ (present price)}$$

$$\underline{x = 23.28d.}$$

or more shortly, **London price of standard silver minus**

**3 % = 1 oz. Mexican dollars in English money** (in the above case,  $24 - 0.72 = 23.28$ d.).

As the full weight of 1 Mexican dollar = 0.868 oz., 1 oz. weight would correspond to 1.15247 dollar pieces. That equation would serve to obtain the price of 1 Mexican dollar from the price of 1 oz. Mexican dollars, or to find the price of 1 oz. Mexican dollars, if the English price of the Mexican dollar is known.

The new ratio between gold and silver of  $32.5855:1$  fixed by Mexico corresponds to a London silver price of  $28\frac{15}{16}$ d., according to the following equations:—

$$\begin{aligned} \text{pence } x &= 1 \text{ oz. standard silver} \\ 1000 &= 925 \text{ oz. pure silver} \\ 32.5855 &= 1 \text{ oz. pure gold} \\ 1 &= 1019.4 \text{d.} \end{aligned}$$

At a silver price above  $28\frac{15}{16}$ d., for instance 30d., it paid well to bring Mexican dollars from Mexico to Europe, and to sell their silver content.

Since the adoption of the gold standard by Mexico, the dealing in Mexican dollars has ceased in London and in New York. Formerly the silver produced in Mexico was brought to the Mexican Mints which exchanged the metal for dollars, while to-day that silver is sold in bars on the markets of the world, as Mexico has suspended the coinage of dollar pieces.

In the year 1895, Mexico changed the stamps, hence the two different kinds of dollar pieces in circulation, “old die” pieces (coins minted before 1895) and “new die” pieces (coins minted after 1895). The weight and size of both coins are identical, only their legend and milling are different.

In Shanghai only “old die” pieces are dealt in, and are counted, while “new die” pieces can only be negotiated by weight.

## THE BRITISH DOLLAR

is a silver coin created in 1894 by the British Government to facilitate commerce in the Far East.

It has been declared legal tender in Hong-Kong and Labuan; its weight is 416 grains, and its fineness  $\frac{900}{1000}$ , and is therefore a true copy of the former Japanese silver yen.

Comparing the British dollar with the Mexican, the latter is, if accurately minted, the more valuable of the two, as it should contain 275 grains more of pure silver. The Bombay mint charges 2 % for the coinage of British dollars.

## THE STRAITS SETTLEMENTS DOLLAR.

This dollar, only coined for circulation in the Straits Settlements, was formerly a true copy of the British dollar. But since October, 1906, it is only minted with a weight of 312 grains and with the old fineness of 0·9. It is like the 50-cents pieces (156 grains 0·9 fine) legal tender for any amount. In October, 1906, the sovereign was declared unlimited legal tender for  $\$8\frac{4}{7}$ , as the value of £7 was fixed at \$60, i.e.  $\$1 = 28d. = 2s. 4d.$

## TAEL.

China, a country with a population of nearly 400,000,000 souls, has but one very tiny coin, made out of copper, iron, and tin, the "**cash**" of the approximate value of  $\frac{1}{50}$  of a penny.

It is obvious that such a coin<sup>1</sup> cannot be of much ser-

<sup>1</sup> Also called "li" or "zin" or "pitje".

vice as account-settler. Moreover, its value is decreasing; where formerly 1000 "cash" were taken for 1 tael, to-day about 1500 cash are considered as the necessary equivalent.

**All payments are effected by silver, which is weighed,** while gold is rarely used for that purpose.

The Chinese weight is called "tael," after which the unit of the Chinese currency is named. The etymology of the word "tael" points to the Indian weight "tola". We have therefore to distinguish between weight tael and currency (or money) tael. While the kilog. all over the world weighs 1000 grammes, the tael weight varies between  $33\frac{5}{8}$  and  $38\frac{1}{4}$  grammes. Also the fineness of the silver used as money is not identical. It follows from this that the value of the various money taels must differ.

In the Treaty Ports, Mexican, British, Marie Theresa dollars, yens, and rupees form the medium of payments. All the silver which the Government receives in payment of duties is melted and refined, and sold as "**sycee**";<sup>1</sup> this silver on account of its fineness commands a higher price than the ordinary silver.

The following taels are the most important for international commerce:—

1. Canton tael; 2. Shanghai tael; 3. Chauping tael;
4. Kuping tael; 5. Haikwan tael.

### CANTON TAELE.

Its weight is fixed by treaty at 583.2 grains, but commercial usage takes it at only 579.84 grains (or 1.208 oz.). Mexican dollars and the silver bars arriving in China from abroad are weighed by Canton tael.

<sup>1</sup> Synonymous with "fine silk," which means that the silver is so fine that very thin threads could be made of it.

## SHANGHAI WEIGHT TAEL.

That tael is the most important of all taels, as it forms the basis of international payments. It weighs 565.697 grains Troy = 1.17853 oz. Troy = 36.65 grammes = 3.1426 tola, and is therefore  $2\frac{1}{2}\%$  lighter than the Canton tael, so that

**100 Canton taels equal 102.5 Shanghai weight taels**  
 $(100 \times 579.84 = 102.50 \times 565.697)$ .

The weight of gold is always expressed in Shanghai weight taels.

## CHAUPING TAEL.

That tael is identical with the Shanghai weight tael. While the latter is also used as money tael, the Chauping tael never appears as currency tael, but is taken as the unit for the weight of silver. In order to avoid mistakes between Shanghai money tael and Shanghai weight tael, the expression "Shanghai weight tael" is never used, and in its place "Chauping tael" is spoken of.

## KUPING TAEL.

The Imperial Treasury and some other Government departments calculate according to Kuping taels which are converted into Shanghai money taels on the basis of

**100 Kuping taels = 109.6 Shanghai money taels.**

## HAIKWAN TAEL.

That tael is called the Government or Customs tael, as the Customs are paid by it. It is the heaviest of all the taels (38.246 grammes), and is converted into Shanghai money taels on the basis of

**100 Haikwan taels = 111.40 Shanghai money taels.**

# SHANGHAI CURRENCY TAELE.

As the silver which circulates in China does not possess a uniform degree of fineness, payments there are not so quickly effected as in this country. They always require the fixing of weights and calculations in which the Chinese excel. If we consider that the Chinese scales leave much to be desired, and that the existing currency is the result of many alterations of preceding currencies, it is not surprising that the definitions of the Shanghai money tael differ. Some years ago—in 1867—the mint in Hong-Kong coined, by way of trial, a Shanghai money tael, and made it 36.67 grammes 0.982 fine (i.e. 36 grammes pure silver), and intended it to replace the theoretical Shanghai currency tael which contains about  $2\frac{1}{2}$  grammes less of pure silver.

Of all existing definitions of the Shanghai money tael, the following seem to be the most simple:—

The Shanghai currency (money) tael can be taken **theoretically** as equivalent to one Shanghai (Chauping) tael weight of silver  $\frac{11}{12}$  fine, i.e. silver of the fineness of the Indian rupee.

It therefore represents, theoretically, 518.555 grains Troy pure silver = 33.59 grammes ( $565.697 \times \frac{11}{12} = 518.555$ ). But in reality its content of silver is  $\frac{1}{3}\%$  less, i.e. **516.82 grains = 1.0767 oz. = 33.48 grammes pure silver.**

As the Shanghai money tael corresponds to 1.0767 oz. pure silver, and the Shanghai (Chauping) tael weighs 1.17853 oz., we find the Shanghai currency based upon silver of the fineness of 0.91323, because  $\frac{1.0767}{1.17853} = 0.91323$ .

As 1.0767 oz. pure silver corresponds to 1.164 oz. standard silver ( $\frac{1.0767}{0.925}$ ), we find the **London parity of the Shanghai currency tael** =  $1.164 \times \text{London price of silver}$ .

At a silver price of 25d., the parity would be 29.1d. = 2s.  $5\frac{1}{8}$ d.

### SYCEE.

The silver which circulates in China as the medium of exchange has the shape of broad shoes, and is therefore called "shoe". The weight of these shoes varies from  $\frac{1}{2}$  tael up to 100 taels; their lowest degree of fineness is 0.935. Currency silver of a higher degree is named "sycee". **The most current sycee is nearly 0.986 fine.**

Before a "shoe" is put into circulation, its weight and fineness are fixed, and the result of the examination is marked on the shoe by the "Kung-ku".<sup>1</sup>

A silver piece marked by the "Kung-ku" is ripe for circulation. Obviously, that process for creating mediums of exchange is a very primitive one, but it must be admitted that the examination is carried through in a very careful and irreproachable manner.

The conversion of sycee into Shanghai money taels is somewhat complicated. But it will appear more simple if we remember that the Shanghai money tael is  $\frac{11}{12}$  fine silver of the weight of 1 Shanghai (Chauping) tael.

We therefore have the following equations:—

$$\begin{aligned} 1000 \text{ Shanghai money taels} &= 1000 \text{ Chauping taels } \frac{11}{12} \text{ fine} \\ &\quad \text{silver} \\ &= 916\frac{2}{3} \text{ Chauping taels pure} \\ &\quad \text{silver} \\ &\quad (1000 \times \frac{11}{12} = 916\frac{2}{3}) \end{aligned}$$

<sup>1</sup>This is the name of the official appointed by the Chinese banks and money changers, and hence of his office.

$$1000 \text{ Shanghai money taels} = 980 \text{ Chauping taels silver} \\ 0.935374 \text{ fine} \\ (980 \times 0.935374 = 916\frac{2}{3}).$$

The last-named equation forms the basis for the conversion of sycee into Shanghai money taels.

**The Chinese take silver of a fineness of 0.935374 as the standard for the circulating silver, and mark it with a premium of "0%".**

As the **lowest grade** sycee is marked with a premium of "4%", it must be of a fineness of 0.9728, because

$$\text{standard} = 0.935374 \\ + 4\% \text{ excess of standard} = \frac{0.037414}{0.972788} (0.935374 \times 0.04)$$

and we find that the equivalent to 1000 Shanghai money taels, in **such** a quality of sycee, is silver of the weight of 942.31 Chauping taels, because  $\frac{916\frac{2}{3}}{0.9728} = 942.31$ . In a similar way we may establish the metal quantity which corresponds to sycee marked  $4\frac{1}{4} - 4\frac{1}{2} - 4\frac{3}{4}$  and upwards to 6 %. Sycee of a higher mark than 6 % does not circulate. Pure silver would have to be marked "6.91" because

$$\text{standard} = 935.37 \\ \text{plus } 6.91\% \text{ of standard} = \frac{64.63}{1000}$$

Putting together the results of these calculations, we obtain the following table:—

Chinese Marks.	Degree of Silver Fineness.	Equivalent to 1000 Shanghai Money Taels in Chaiping Taels Silver.
0	<b>935.374</b>	<b>980</b>
4	972.788	942.31
4 $\frac{1}{4}$	975.127	940.04
4 $\frac{1}{2}$	977.466	937.80
4 $\frac{3}{4}$	979.804	935.56
5	982.142	933.34
5 $\frac{1}{4}$	984.481	931.13
5 $\frac{1}{2}$	985.650	930.01
5 $\frac{3}{4}$	986.819	929.05
6	989.158	926.71
	991.496	924.53
6.91	1000.000	916.67

The above-mentioned equation :—

1000 money taels = 980 Chaiping taels weight (0.935)  
can also be written :—

$$\frac{100}{98} \text{ money taels} = 1 \text{ Chaiping tael (0.935).}$$

If we call the quantity of silver to be valued  $q$ , its money value would be  $q \times \frac{100}{98}$ , or as the Chinese mark silver, 0.935 fine, “0”

$$q \times \left( \frac{100 + 0}{98} \right) = q \times 1.0204.$$

If the quantity of silver were 0.972 fine (or according to the Chinese way of writing “4”) the money value would be

$$q \times \left( \frac{100 + 4}{98} \right) = q \times 1.06122.$$

The money value of silver 0.9868 fine would be

$$q \times \left( \frac{100 + 5.5}{98} \right) = q \times 1.07653.$$

The multiplicators to be used would therefore be :—

$$1.0204—1.06122—1.07653.$$

From this we are able to establish the money value of a sycee remittance by the following methods:—

Sycee is generally packed in boxes containing 60 shoes of a weight of about 50 Chauping taels each.

### I.

Presuming a total weight of 3000 taels ( $60 \times 50 = 3000$ ), and the surplus in value of  $2\frac{3}{4}$  taels for each shoe or  $5\frac{1}{2}\%$  of 3000 ( $60 \times 2\frac{3}{4} = 165$ ), we arrive at the figure **3165**, which divided by 98, gives **£3229.59** Shanghai money taels as value of the remittance.

### II.

The multiplicator which is to be used for  $5\frac{1}{2}$  sycee (or  $2\frac{3}{4}\%$  for 50 taels) is 1.07653, therefore  $3000 \times 1.07653 =$  **£3229.59** as the result of the calculation.

### III.

The table for converting sycee into money taels gives 929.05 Chauping taels silver with the mark  $5\frac{1}{2}$  as equivalent to 1000 Shanghai money taels; the money value of 3000 Chauping taels of **such** silver must therefore be  $1000 \times \frac{3000}{929.05} =$  **£3229.59**.

## MEXICAN SILVER DOLLARS IN CHINA.

The Spaniards brought Spanish dollars to China, as far back as the sixteenth century, and Spaniards were the first who made Mexican dollars popular there. The currency of Hong-Kong is still to-day based entirely upon Mexican dollars.

**\$1000 must weigh 717 Canton taels.**

It can therefore happen that 1000 very light dollars weigh less than 717 Canton taels, i.e. that the normal

weight of 717 Canton taels is represented by more than 1000 dollar pieces.

As 717 Canton taels (at 1.208 oz.) = 866.136 oz., it follows that the weight of \$1 is taken as 0.866136 oz., and as the dollar is 0.9 fine (if correctly minted it ought to be 0.902 fine), 866.136 oz. Mexican dollars = 842.727 oz. English standard silver  $(866.136 \times \frac{900}{925})$ , we may say that the currency of Hong-Kong is based upon the equation :—

$$\$1 = 0.843 \text{ oz. standard silver.}$$

At the London silver price of 25d., the dollar parity would be 1s.  $9\frac{1}{16}$ d.  $(0.843 \times 25)$ .<sup>1</sup>

In former years there circulated in Hong-Kong a great number of base dollars which induced the money changers to mark the coins, and as these "chopped" coins on account of their long service are under the normal weight, the traders make a difference between "chopped" and "clean" (unmarked) coins; the latter always command a higher price. In some parts of China, the dollar is divided for payments of small amounts, and these parts appear in commerce as "broken dollar". In Shanghai "clean" Mexican dollars are dealt in by the piece, "chopped" dollars according to weight. The following calculation shows \$72 as value of \$100 "chopped" :—

$$\$x = \$100 \text{ Mex.}$$

$$1000 = 717 \text{ Canton taels}$$

$$100 = 102.5 \text{ Chaup. taels}$$

$$1000 = 898 \text{ Chaup. taels fine}$$

$$11 = \$12 \text{ (or } 916\frac{2}{3} \text{ Chaup. = 1000 money taels).}$$

<sup>1</sup> For some time the Hong-Kong dollar quotes 3.5 % above its silver parity.

(For the calculation of bar silver, see page 82.)

All these accounts show the clumsiness of the Chinese monetary system, and its peculiarity which originates from different changes. The equalization of 100 Haikwan taels with 111·40 Shanghai money taels proves clearly that the currency of Shanghai must also have been based formerly upon silver of a fineness of 0·898, as  $111\cdot4 \times 0\cdot898 = 100$ . Further, the standard of 0·935 must arouse astonishment. In other words, all these successive transformations have changed the value of the various money taels, and the value of the new taels which have taken the place of the old taels, was fixed to the advantage of Chinese bankers and money changers. It is therefore not in the least surprising that these money dealers oppose with all their might the introduction of a new silver coin which would bring simplicity and accuracy into the monetary system.

#### GOLD IN CHINA.

As already mentioned, the price of gold in China is subject to considerable fluctuations. Gold in China is an article of commerce with changing prices, just as silver is with us. If the price of silver falls in the Western markets, the price of gold in China must rise.

The Chinese express the fineness of gold in parts of 100 (in per cent); every part of it is called "touch" or "toque". Pure gold (100/100) is therefore gold of "100 touch," and gold of "98 touch"—the gold which is mostly dealt in in Shanghai—means gold of 98% pure gold and 2% alloy, or in our way of writing, gold of 0·98 fineness.

Shanghai quotes gold for 10 taels weight (Shanghai = Chauping) in money taels; a Shanghai quotation of £420 for gold at a simultaneous price of 28d. for the Shanghai tael therefore corresponds to the London gold price of **77/9½d.** according to the following calculation:—

s. $x$	= 1 oz. standard gold
12	= 11 oz. pure
98	= 100 oz. Shanghai gold
1.17853	= 1 Shanghai tael weight
10	= £420
1	= 28d.
12	= 1s.

---

The shipping expenses of gold from China to London amount to  $1\frac{2}{3}\%$ , supposing that the capital necessary for the shipment should bring an interest of  $4\%$  per annum.

The subdivisions of the money tael are the following:—

1 tael	= 10 mace
1 mace	= 10 kandareens (or 10 cents)
1 kandareen	= 10 cash

so that 1 tael = 100 cents = 1000 cash nominal.

The Chinese bankers quote the money rate in mace per day for \$1000.

### MARIA THERESA TALER.

This medium of exchange has a very large circulation throughout the world; it serves in the Mediterranean (where it is called "Levantine dollar"), in the Far East, and on the East coast of Africa (where it is known as "Januario").

It was created in 1780 by Maria Theresa, and though it is never seen in Austria, it is still issued by the Vienna Mint.

One old Vienna mark (280.668 grammes) **pure** silver is coined into 12 Maria Theresa talers, each of them therefore containing 23.389 grammes pure silver, which would be equal, at the present silver price of 24d. the

oz. standard (or 25.95d. the oz. pure metal, or 1 gramme = 0.834d.), to 19.5d. The full weight of the coin would be, as it is minted  $\frac{5}{6}$  fine ( $\frac{833\frac{1}{2}}{1000}$ ), **28.0668** grammes.

The Vienna Mint returns for 1 kilog. pure silver 42 talers, and pays the value of 17.662 grammes pure silver ( $42 \times 23.389 = 982.338$  grammes). The Mint charges k. 2.70 for the converting of 1 kilog. silver into Maria Theresa talers, and debits an assay fee of k. 0.60 for each bar.

When the price of silver is low, the arbitrage generally pays well, as the talers can be used in the East (Persian Gulf) considerably above their cost price. But at such moments the Vienna Mint is overcrowded with orders, and if the Mint is then also busy with other coinages, it takes many months before the talers can be delivered at their destination.

The principal market for Maria Theresa talers is Trieste (formerly Alexandria), which deals in them for cash and for forward delivery.

Freight expenses, Vienna-Trieste,  $1\frac{1}{2}\%$ .

## SILVER DOLLARS OF THE UNITED STATES.

While the silver content of that coin (created in the year 1792) was always fixed at  $371\frac{1}{4}$  grains (24.05 grammes), its full weight has changed. At present it is minted 0.9 fine, its full weight therefore is  $412\frac{1}{2}$  grains ( $371.25 \times \frac{10}{9}$ ). At the present silver price of 52 cents per oz., the grain pure silver costs 0.108 cents, and  $371\frac{1}{4}$  grains about 40 cents. The United States silver dollar has therefore depreciated to the extent of 60 %, yet this is a matter of no importance, as the silver dollar has the same paying power as the gold one.

As the weight of \$1 in gold is 25.8 grains, and as the weight of \$1 in silver is 412.5 grains, and both coins are minted  $\frac{900}{1000}$  fine, the ratio between the two metals stands 412.5 : 25.8 or 16 : 1.

## BAR SILVER.

### IN LONDON.

The silver bars appearing in the commerce of the world have the shape of bricks, a fineness of 0.996-0.999, and a weight from 980 up to 1190 oz. Troy (30½-37 kilog.).

Until a short time ago the fineness of the bars was given in terms of the English standard (0.925), and the difference was described with "B" (better) or "W" (worse). As the English standard in common fractions is  $\frac{11\frac{2}{5}}{12}$ , a bar marked "17 B" was of a fineness of

$$\frac{11\frac{2}{5} + \frac{1}{6}}{12} = \frac{11\frac{1}{2}}{12} = \frac{239}{240} = \frac{996}{1000},$$

and the mark "6 W" meant silver of the fineness of

$$\frac{11\frac{2}{5} - \frac{6}{20}}{12} = \frac{216}{240} = \frac{900}{1000}$$

The new method of expressing the fineness in mille-simal fractions is obviously less complicated, and has also been adopted in the markets of the East.

The weight of the bars is now given within  $\frac{1}{4}$  oz., while formerly only fractions of  $\frac{1}{2}$  oz. were marked.

The London bullion market has no special building for itself; the bullion brokers accept buying or selling orders of bar silver during the whole day, mostly from the banks operating in the Far East. The brokers meet daily at 2 p.m., and fix the silver price of the day in accordance with the orders on hand.

The silver price, like the price of any other commodity, depends upon supply and demand. The market may therefore at times be very limited, and important orders "at

best" or at the "fixed price" coming on such a narrow market may produce a considerable change in the price. The new price could not be maintained long, as even on the following day orders based on it would flow in, and their execution would tend to re-establish the old price. The arbitrager would therefore do well not to give orders "at best" or at the "fixed price," and to operate only at a distinct price.

Every day two prices are fixed, one for "spot silver" (silver deliverable within seven days), and one for "forward silver" (silver deliverable after two months). The above-mentioned Eastern banks are often enough obliged to deal in "forward silver" in order to cover their exchange operations.

The steamers carrying the bars from London to the East leave London every Friday morning; after three weeks they arrive in Bombay, and after another three weeks in Shanghai. The London time of 10 a.m. corresponds to 3 p.m. in Bombay and 6 p.m. in Shanghai. The City therefore already knows in the morning the Eastern silver prices of the day. A further consequence of this difference in time is that the European arbitrager cannot undo his bargain on the day of its conclusion, and is obliged to remain in speculation over-night. The arbitrager living in the East can, on the contrary, liquidate every transaction on the day of its entering.

On every bar is marked its weight and fineness; its identity is shown by an initial and a number. Every bar is accompanied by a sample weighing about  $\frac{1}{4}$  oz. and by a certificate of assay.

The value of the following bar:—

"E 340. oz. 1120. 0.998,"

at the price of 23½d. per oz. standard, would be

$$1120 \times \frac{998}{1000} \times \frac{1000}{925} \times \frac{235}{240} = £118\ 6s.\ 5d.$$

## IN INDIA.

The most important silver market in the world is at Bombay, with which the silver market in Calcutta cannot compete in the least.

Bombay deals in silver for cash, for the current month and for the next following month. The time bargains are completed on the settling days, which are fixed beforehand. On the settling days there also takes place the carry-over of silver positions. In addition to the named dates, silver can also be dealt in for "shipment," that means for a period of about four weeks within which the silver can be bought and shipped.

The arbitrager must bear these usages in mind. The "bazaars" (native dealers) pay for "shipment silver" sometimes only ten days after arrival of the metal.

**Silver is quoted ex duty of 4d. per ounce.**

As the former duty was a 5% *ad valorem* duty, the arbitrager had sometimes more duty to pay than to receive. Similar losses cannot occur any more, and the statement which the arbitrager receives from his Indian correspondent must now show the same amount of duty on both sides of the account.

The creation of an important "bear position" in silver in India against a simultaneous purchase of "forward silver" in London, is fraught with danger, as the bazaars, well informed about the shipped metal quantities, may exact in the settlement a high "back" on silver. It is therefore well to abstain from carry-over transactions in the Bombay silver market, and to confine the arbitrage to the purchase of "spot silver" in London and its simultaneous sale in Bombay with immediate metal shipping.

Bombay also deals largely in options in silver. Bombay has no particular market time; the bazaars deal in silver all day long, from early morning till late at night.

**Bombay quotes 0·998 fine silver in rupees for 100 tolas.**

As 1 tola =  $\frac{2}{3}$  oz., we find 100 tolas = 37·5 oz. containing 37·425 oz. fine silver ( $37\cdot5 \times 0\cdot998$ ) = **40·46 oz. standard** ( $37\cdot425 \times \frac{1000}{925}$ ). Bombay does not indemnify for bars finer than 0·998; the arbitrager will therefore try to ship only the latter, and if he should not be able to avoid the shipment of bars 0·999 fine, he would have to take the difference of 1% into account ( $0\cdot998 - 0\cdot999$ ).

The following list of expenses is based upon a rate of interest of 4% per annum for the capital employed in the shipping:—

Brokerage for the purchase of

silver in London	-	-	$\frac{1}{8}\%$	= 0·1250
Freight, London-Bombay	-	-	$\frac{1}{2}\%$	= 0·5000
Insurance	-	-	$\frac{3}{4}\%$	= 0·0750
Sundry expenses	-	-	$\frac{1}{2}\%$	= 0·0500
Twenty-two days' interest, 4%				= 0·2500
Loss 0·998/0·999	-	-		= 0·1000
Brokerage for the sale in Bombay			$\frac{1}{16}\%$	= 0·0625
Banker's commission in Bombay			$\frac{1}{8}\%$	= 0·1250
				<hr/>
				1·2875

We do not take into consideration the interest for the ten days' grace of the bazaars, as these are not always claimed, and because the estimated loss through delivery of 0·999 fine bars will not often occur.

The silver quantity which has to be delivered in Bombay for 100 tolas must be oz. standard 40·46, plus the silver equivalent for the named expenses ,, 0·54 (about 1·3%).

We have therefore the equation :—

$$41 \text{ oz. standard} \times \text{London price} = \text{Indian price} \times 16d. \quad (1)$$

And it follows that

$$\begin{aligned} \text{London silver price} &= \text{Indian silver price} \times \frac{16}{41} \\ &= 0.39 \times \text{Indian silver price} \end{aligned} \quad (2)$$

$$\begin{aligned} \text{Indian silver price} &= \text{London silver price} \times \frac{41}{16} \\ &= 2.56 \times \text{London silver price} \end{aligned} \quad (3)$$

We have here taken the value of the rupee at 16d.; if that value should be higher or lower than 16d., we have to fix the difference, and then to add or to subtract the corresponding fraction.

If we substitute in the equation (1) for the multiplier (16d.) the word "Indian exchange," the equation will then read : **41 oz. standard × London silver price = Indian silver price × Indian exchange**, and it follows that

$$\text{Indian exchange} = 41 \times \frac{\text{London silver price}}{\text{Indian silver price}},$$

which equation enables us to calculate remittances to India by means of bar silver.

### IN CHINA.

Regular dealings in bar silver in **Hong-Kong** have ceased for some time; now and then single transactions in American bar silver occur. It is therefore of little practical value to treat fully of the silver dealings in this English colony. We will only mention that it is customary in Hong-Kong to weigh the silver with Canton taels, and to pay for every **71.7 \$100 plus a fluctuating premium** (agio). A Hong-Kong quotation for American bar silver of **7½%** therefore means that 71.7 Canton taels weight of 0.998 fine silver were dealt in at \$107½, and its London parity at

the dollar price of 1s. 9½d. would be **24½d.** according to the following calculation :—

$$\begin{aligned}
 d. x &= 1 \text{ oz. standard} \\
 1000 &= 925 \text{ oz. fine} \\
 998 &= 1000 \text{ oz. bar silver} \\
 1.208 &= 1 \text{ Canton tael weight} \\
 71.7 &= \$107.5 \text{ Hong-Kong} \\
 1 &= 21.5 \text{d.}
 \end{aligned}$$

The arbitrager will therefore leave Hong-Kong aside, at least for the present, and look after the daily cabled rate for telegraphic transfer Shanghai.

As already mentioned, bar silver in **Shanghai** is likewise weighed with Canton taels which are converted into Chauping taels. When the Chinese **sell** sycee, they reckon 100 Canton taels as equivalent to 102.5 Chauping taels; when they **buy** sycee or bar silver, then they allow only 102.4 Chauping taels for 100 Canton taels; a proof that the Chinese well understand their own interests. Moreover, the Chinese use two different scales, one for ascertaining the weight of the silver bars arriving from the West, and one for the weight of the sycee to be sold. The difference in weight indicated by both scales is  $\frac{2}{3}\%$ , because the Chinese

buy 1.17374 oz. std. silver (in shape of bars)  
 and sell 1.16588 oz. , , (in shape of sycee) } for **£1<sup>1</sup>**  
 Difference 0.00786 oz. std. =  $\frac{2}{3}\%$ .

The almost stationary price for bar silver in Shanghai is **£111.20** for 100 Canton taels weight according to the following calculation :—

<sup>1</sup> These figures are based on various important shipments which have come within the author's own experience.

$\$x = 100$ Canton taels weight
$100 = 102.4$ Chauping taels weight
$930 = \$1000$
<hr/>
$x = 110.10$

Adding 1% for fine- ness of silver - - -	= 1.10
Value of bar - - -	<hr/> $= \$111.20$

930 Chauping taels weight correspond to 1000 money taels, and represent sycee with the mark  $5\frac{2}{8}$ , which is 0.98565 fine (see table, p. 70).

The Chinese allow only 1% for the greater fineness; i.e. they pay only for 0.9955 silver, and make a further profit of  $\frac{1}{4}\%$ , as they fix the fineness of the bars too low.

The expenses connected with a silver shipment to China—a money rate of 4% being presumed—amount to  $1\frac{3}{8}\%$ , as:—

Brokerage for purchase silver in

London - - - - -	$\frac{1}{8}\%$ = 0.1250
Freight, London-Shanghai - - -	$\frac{1}{2}\%$ = 0.5000
Sundry expenses - - -	$\frac{1}{2}\%$ = 0.0500
Insurance - - -	$\frac{3}{4}\%$ = 0.0750
Forty days' interest, 4% - - -	= 0.4445
Brokerage for sale bars - - -	$\frac{1}{16}\%$ = 0.0625
Bankers' commission in China	$\frac{1}{8}\%$ = 0.1250
<hr/>	
	1.3820

IN NEW YORK.

The greater part of the silver produced in the United States and in Mexico is shipped via New York to London.

The dealings in bar silver in New York take place either in English money for 1 ounce standard, or in United States money for 1 ounce pure metal.

The New York price of 56 cents would therefore be equal to  $56 \times \frac{925}{1000} = 51.8$  cents for 1 oz. standard silver, which at the par of 49.316d. per dollar would be equal to  $0.518 \times 49.316 = 25\frac{1}{2}$  pence.

The London quotation for silver of 27d. would correspond to  $27 \times \frac{1000}{925} = 29.18$ d. for 1 oz. pure silver, and in United States money on the basis of 49.316d. per dollar  $\frac{2918}{49.316} = 59.17$  cents.

The operations with the fixed figures in the preceding calculations lead to the final figures 0.45617 and 2.1921.

**The American silver price multiplied by 0.45617, shows the English parity price, and the English silver price multiplied by 2.1921 gives the New York quotation.**

The shipping expenses of bar silver from New York to London—freight, insurance, brokerage and 4 % interest for the money employed—amount to about  $\frac{1}{2}$  %.

## VARIOUS CURRENCIES.

## BOLIVIA.

On 14 September, 1906, this Republic gave up the silver standard, and adopted a gold standard.

The basis of the former currency was **the boliviano**, a silver coin minted after the model of the French 5-franc piece, i.e. 25 gr. weight 0·9 fine, while the unit of the new monetary system is **the peso** at 100 centavos. The boliviano will be withdrawn from circulation, and in its place will be issued :—

50 centavos-pieces weighing 12·5 grammes)					
20	„	„	5	„	0·9 fine
10	„	„	2·5	„	

The new gold coins are :—

The 5 peso pieces with a weight of 7·988 gr.,  $\frac{11}{12}$  fine.

The  $2\frac{1}{2}$  peso pieces „ „ 3·994 gr., „

They, therefore, correspond to the value of the English and Peruvian pounds. Sovereigns and Peruvian pounds are legal tender for 5 pesos.

The value of  $12\frac{1}{2}$  bolivianos is fixed at £1, which makes the value of 1 *boliviano* equal to 19·2d.  $\left(\frac{240}{12\cdot5}\right)$ .

As 1 sovereign contains 7·3223 gr. pure gold, and corresponds to  $12\frac{1}{2}$  bolivianos at 22·5 gr. pure silver = 281·25 gr. pure silver, we find 7·3223 gr. pure gold = 281·25 gr. pure silver, or 1 gr. pure gold = 38·41 gr. pure silver, while the old currency fixed the ratio between the two metals at 1 : 15·5.

## CANADA.

The monetary system of Canada is based on gold; its unit is the **dollar** of 100 cents, and its value is identical with the dollar of the United States. Since November, 1907, the sovereign and the eagle are declared legal tender, the former for \$4·86 $\frac{2}{3}$ , and the latter for \$10.

The Mint at Ottawa, established only a short time ago, has not yet issued any gold coins, and has had its work limited to the minting of silver coins, which are 0·925 fine.

The 50-cents pieces weigh 179·3336 grains = 11·62 grammes.

„ 25- „ „ „	89·6668 „	=	5·81 „
„ 10- „ „ „	35·8667 „	=	2·32 „
„ 5- „ „ „	17·9334 „	=	1·16 „

The Mint is authorized to charge for the coinage of gold :—

3 cents per oz. for quantities of 500 oz. gold and  
2 „ „ „ „ above 500 oz. gold

which corresponds to a charge of 1 %.

## CHILI.

(1 peso = 100 centavos.)

During the last twenty years the currency of this Republic has experienced great changes. Originally, a double standard was used; later on, the country adopted a gold standard which could not be maintained long, and which was soon displaced by a paper currency.

First, the peso was equal to 1·5253 grammes gold (0·9 fine) and „ 25 grammes silver (0·9 fine)

That proportion of silver to gold (25 : 1·5253 = 16·93 : 1) did not coincide with the prices of these precious metals

on the market of the world, and led to an exportation of gold.

Chili afterwards reduced the metal content of both pesos and fixed—

the gold peso equal to 0.599 grammes ( $\frac{11}{12}$  fine) and

the silver peso „ „ 20 grammes (0.835 fine); the proportion between the two metals was therefore raised to **30.41 : 1.**

The English parity of the gold peso is therefore :—

$$0.599 \times 30.045d. = 18d.$$

As the gold peso is of the same fineness as the sovereign, it follows that 1 gramme of it has the same value as 1 gramme of the English coin, i.e.  $\frac{240d.}{7.988} = 30.045d.$  (see page 46).

The 20-peso piece (English parity 30s.) is called "condor" or "colon".

The 10-peso piece (English parity 15s.) is called "doublon".

The 5-peso piece (English parity 7s. 6d.) is called "escudo".

The sovereign is declared legal tender for  $13\frac{1}{3}$  pesos ( $13\frac{1}{3} \times 18 = 240d.$ ), and silver coins can be used legally only for payments up to 50 pesos.

To-day notes circulate in the country for pesos 150,000,000, 50 % of which only are covered by gold. The paper peso is therefore only covered by 9d. in gold; its exchange value is at the present moment 11d., which price corresponds to a gold premium of 63.6 %, according to the following calculation :—

$$\text{paper peso } x = 100 \text{ gold pesos}$$

$$1 = 18d.$$

$$11 = 1 \text{ paper peso.}$$

---

As the stock of gold acquired as cover for the notes

in circulation, also called "conversion fund," is monthly increased by payments of the Government, a steady improvement of the Chilian currency can be expected.

## COLOMBIA.

The currency of this Republic proves in a terribly clear manner what permanent political unrest and financial disaster may produce.

In the year 1857 the country adopted a double standard, and following the French example fixed the ratio between silver and gold at  $15\frac{1}{2} : 1$ . Gold peso and silver peso were coined 0·9 fine, the former contained 1·45161 grammes pure gold, the latter  $1\cdot45161 \times 15\cdot5 = 22\cdot5$  grammes pure silver.

For about thirty years the Republic could defend that double standard, but at last it broke down, and a paper currency of the worst type took its place. For many years 10,000 paper pesos paid for 100 gold pesos, i.e. the premium on gold rose to 9900 %. To prevent a further rise of the agio, the Government fixed the value of **1 gold dollar at 100 paper pesos**, and ordered the issue of new 5-dollar pieces in gold, which are true copies of the sovereign. These Colombian pound pieces have accordingly the value of 500 paper pesos, and the value of **1 paper peso** in English money is therefore  $\frac{240d.}{500} = 0\cdot48d.$  or nearly  $\frac{1}{2}d.$

The following silver coins are likewise issued :—

1 peso =	25	grammes (0·9 fine)
$\frac{1}{2}$ „ =	$12\frac{1}{2}$	„ (0·835)
$\frac{1}{5}$ „ =	5	„ (0·666)
$\frac{1}{10}$ „ =	$2\frac{1}{2}$	„ (0·666)

Up to January, 1908, notes for 660,770,000 pesos had been withdrawn and burned; the remaining notes in circulation are estimated at 800,000,000 pesos with a converted value of £1,600,000.

## COSTA RICA.

The monetary unit since 1898 is the "colon," divided into 100 cents, equal to 0.7002 grammes pure gold. It is not represented by a single coin, as the issued coins are for 2, 5, 10, and 20 colons in gold, and for 5, 10, 25, and 50 cents in silver.

As the colon in silver contains 18.75 grammes pure silver (25 grammes  $\frac{3}{4}$  fine), the ratio between gold and silver is  $0.7002 : 18.75 = 26.778 : 1$ .

## CUBA.

This Republic does not mint its own coins; there are in circulation Spanish, Mexican, and United States pieces.

The accounts of the Government offices, railways, steamship companies, and similar public concerns are kept in United States currency, while trade and commerce still reckon in pesos and take:—

20-peseta pieces	for	4.24	pesos
25- „ „ „ „	„	5.30	„
20-franc „ „ „ „	„	4.24	„

The general introduction of the monetary system of the United States is only a question of time.

## DUTCH EAST INDIES.

The old Spanish piastre (with the fixed value of florins  $2\frac{1}{2}$ ), the Mexican dollar (with the fixed value of florins 2.55), and Dutch coins, form the medium of exchange, while in the interior of the Islands, barter is still carried on.

## ERITHREA.

Italy, as a member of the "Union latine," is not authorized to issue any more silver coins on the model of

the French 5-franc piece, and has therefore minted for the requirements of this small colony a silver coin called "**Eritrea taler**," weighing 28.125 grammes, coined  $\frac{800}{1000}$  fine, containing like the French 5-franc piece 22.5 grammes of pure silver.

### FRENCH INDO-CHINA.

The French Government has coined for use in this colony **piastres** in silver, weighing 27 grammes,  $\frac{900}{1000}$  fine; their intrinsic value is therefore almost identical with that of the Mexican dollar.

### GERMAN EAST AFRICA.

The Berlin Mint issues for use in this colony the following silver coins:—

2-rupee pieces weighing 23.3272 grammes  $\frac{11}{12}$  fine

$\frac{1}{2}$ - " " " 5.8318 " "

$\frac{1}{4}$ - " " " 2.9159 " "

The coinage of the 1-rupee pieces has been suspended.

As 23.3272 grammes correspond to 360 grains, it is obvious that the German 2-rupee piece is made on the basis of the Indian rupee, which weighs 180 grains, and is likewise  $\frac{11}{12}$  fine.

### KOREA.

This country has adopted a gold standard since 1905 on the model of Japan, and its currency may be taken as identical with the Japanese currency.

In 1908 Japan ordered subsidiary silver coins of a value of yen 2,000,000 for circulation in Korea.

## MOROCCO.

The currency of Morocco is based on silver, and its unit is the dollar (at 20 gersch) weighing 25 grammes, and 0·9 fine. That coin is therefore a true copy of the French 5-franc piece.

There were also coined in Paris, Berlin, and Birmingham:—

$\frac{1}{2}$ -dollar pieces	12 $\frac{1}{2}$	grammes	0·9	fine
$\frac{1}{4}$ -	„	6 $\frac{1}{2}$	„	„
$\frac{1}{10}$ -	„	2 $\frac{1}{2}$	„	„
$\frac{1}{20}$ -	„	1 $\frac{1}{2}$	„	„

The commercial value of these coins depends entirely upon the price of silver.

## NEWFOUNDLAND.

Accounts are kept in dollars, and the value of \$1 is fixed at 50d. The \$2 piece in gold (200 cents) weighs 3·328 grammes and is  $\frac{11}{12}$  fine, that is of the fineness of the English sovereign.

The equations:—

$$\begin{aligned} \text{pence } x &= 3\cdot328 \text{ grammes} \\ 7\cdot988 &= 240\text{d.} \end{aligned}$$

give  $x = 100$ , or \$2 equal to 100 pence, or \$4·80 = £1.

## PERU.

Formerly Peru had a double standard based upon the well-known French ratio of  $15\frac{1}{2} : 1$  between gold and silver. The unit was the "sol" (sun) which was coined in gold as well as in silver.

The sol in gold weighed 1·613 grammes and was 0·9 fine.

The sol in silver weighed 25 grammes and was 0·9 fine.

But that standard could not be maintained. The war with Chili was too costly, and also the continuous fall of the silver price told against Peru. A paper currency took the place of the double standard. In the year 1900 Peru resolved to adopt the gold standard; it changed the old ratio of  $15\frac{1}{2}:1$  to  $30\cdot72:1$ , it reduced the gold content of the sol to 0·73223 grammes, and left the silver sol unchanged. Peru coined  $\frac{1}{2}$  fine gold into 10- and 5-sol pieces; the former contains 7·3223 grammes fine gold, and is thus a true copy of the sovereign. Hence the name of "Peruvian pound" and "Peruvian half-pound".

The value of the sol ( $\frac{1}{10}$  Peruvian pound) in English money is therefore 2 shillings.

Notes are not known in Peru.

## PERSIA.

The Persian monetary system is modelled on that of France, the "kran" taking the place of the franc. The 20-kran piece in gold (double toman) is exactly like the French 20-franc piece (6·45 grammes  $\frac{900}{1000}$  fine). The silver kran is of a weight of 4·6 grammes, coined  $\frac{900}{1000}$  fine, and divided into 1000 dinars.

The gold coins do not circulate freely, and their price depends upon the price of silver.

## RUSSIA.

Russia issues pieces of 1 rouble in silver, weighing 20 grammes, minted  $\frac{900}{1000}$  fine, and as the  $7\frac{1}{2}$ -rouble piece in gold, which is likewise of a fineness of  $\frac{900}{1000}$ , weighs 6·452

grammes (or 0·86026 grammes gold for 1 rouble), the ratio between silver and gold has been fixed at 20 : 0·86026, that is **23 $\frac{1}{4}$  : 1**.

In the year 1893 Russia likewise suspended the free coinage of silver.

### SIAM.

This kingdom is just now changing its monetary system, abandoning the silver standard, and adopting a double standard. The unit remains as before the "**tical**," and it will be coined : **in gold**—10-tical pieces weighing 6·2 grammes 0·9 fine = 5·58 grammes pure ; **in silver**—1-tical pieces weighing 15 grammes 0·8 fine = 12 grammes pure.

Both coins are legal tender.

The **English** value of the tical is therefore  $0\cdot558 \times 32\cdot7762 = 18\cdot29d$ .

According to the new coinage law, 5·58 grammes gold are equal to 120 grammes pure silver, that is to say that the value of gold is considered  $21\frac{1}{2}$  times higher than the value of silver.

### SPAIN.

(1 peseta = 100 centimos.)

The Spanish monetary system is modelled on that of France, the "**peseta**" taking the place of the franc.

The old dollar, coined before the year 1848, circulates still in the East and in Africa as "dollar" or "peso" or "piastre," for which reason we will mention it. It was coined with a weight of 26·891 grammes and with a fineness of 0·896. Its intrinsic metal value at the London silver price of 25d. would be  $\frac{26\cdot891 \times 0\cdot896 \times 25}{31\cdot1 \times 0\cdot925} = 20\cdot95d$ .

Of the old gold coins there still circulates the "**doblone Carolus IV**" of 1794, also called "quadruple" or "onza

de oro". Sometimes this coin appears on the Paris market, and is officially quoted. It is a little heavier than the old silver dollar; it weighs 26.95 grammes, and is 0.894 fine. Its parity is therefore  $26.95 \times 0.894 \times 2.73135s. = 65.8s.$ , while it passes in the East only for 64s. on account of its age.

The gold coins minted since 1876 are true copies of the corresponding French coins; the 25-peseta pieces (Alphonsd'or), which the French monetary system does not know, form an exception.

The peseta is an exact copy of the franc, the intrinsic silver value of both coins is therefore identical, i.e. 37.57c. at the Paris silver price of 90 fr. The issue of silver coins, which are legal tender for any amount, shows accordingly a profit of 166 %. Spain to a great extent took advantage of such coinages, and hereby deteriorated the currency of the country. Although the premium on gold is steadily falling, it is still 7 % according to the following calculation:—

$$\text{currency pesetas } x = 100 \text{ gold pesetas.}$$

$$25.22 = £1$$

$$1 = 27 \text{ currency pesetas.}$$

## TURKEY.

The 20-piastre piece in silver ("silver medjidié"), weighing 24.055 grammes, and  $\frac{830}{1000}$  fine, contains 19.965 grammes pure silver.

It is legally equal to 19 piastres in gold.

£T1 therefore = 105.26 piastres in silver medjidiés, which makes the ratio between gold and silver 1:15.88, as we find 6.6146 grammes pure gold (see p. 36) = 105.07 grammes pure silver.

In Asia Minor £T1 is taken as equal to 120-140 under-rated silver piastres.

## VENEZUELA.

The “**venezolano**” is the monetary unit.

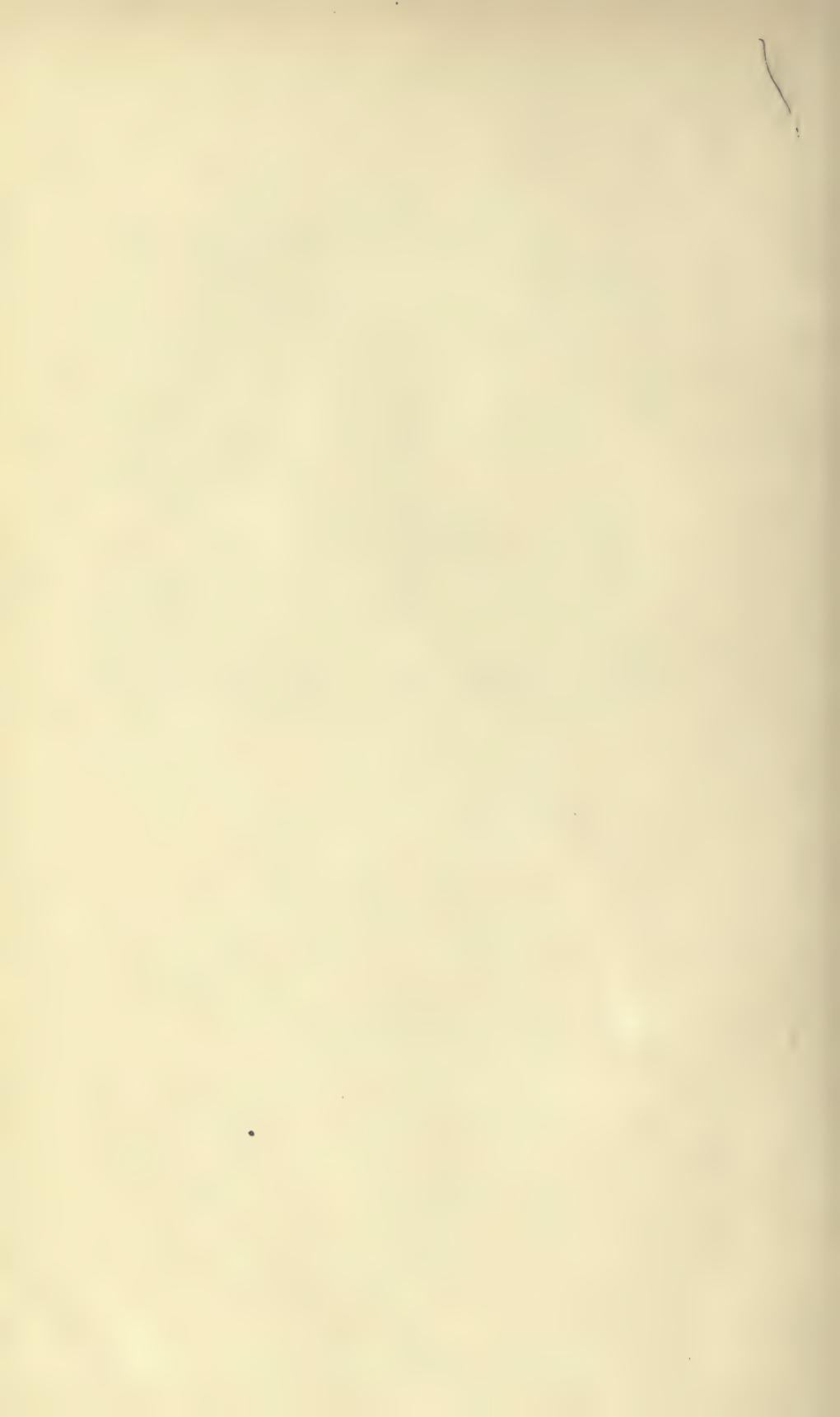
The venezolano in silver corresponds exactly to the French 5-franc piece, and is divided into 5 “bolivars” of 100 cents; the venezolano in gold represents the fourth part of the French 20-franc piece, containing 1.613 grammes gold. As both venezolanos are minted  $\frac{900}{1000}$  fine, the ratio between gold and silver stands 25 : 1.613, or  $15\frac{1}{2} : 1$ .

## ZANZIBAR.

The 5-dollar piece in gold is a true copy of the United States half-eagle piece, weighing 8.359 grammes with a fineness of  $\frac{900}{1000}$ ; the \$1 piece in silver, minted  $\frac{900}{1000}$  fine, weighs 27.215 grammes.

There are also rupees and Maria Theresa talers in circulation.

## **II. ARBITRAGE IN BILLS OF EXCHANGE.**



THE commerce of the world, as far as payments are concerned, is mostly carried on by means of bills, long or short dated.

Payments in form of cheques may be considered as payments by way of bills on demand.

We presuppose the knowledge of the nature of a bill of exchange, and its legal position.

The laws on bills of exchange in the different countries agree on the main points. The following differences are, however, to be noted :—

While bills of exchange payable in Germany and France must be paid on the day of maturity, bills payable in England (with the exception of bills on demand) become only payable 3 days after they are due; their acceptor is granted a delay of 3 days ("days of grace").

"Bank Post Bills" (bills issued by the Bank of England, payable after 7 days or 60 days) and "Treasury Bills" have not the benefit of the 3 days' grace.

When the day of maturity of a bill falls on a Sunday or on a general holiday, such bills have to be paid in Germany on the next following business day, in England and France on the preceding business day.

The law on the prescription of bills in the various countries differs, but we need not mention these divergencies, as the bills in which arbitrage operations are undertaken are always bills of the highest order.

A bill, if not made payable at a Bank, is on its maturity presented to the acceptor, who pays for it in cash, or with a cheque on his banker.

The cheque is then generally made out "bill attached,"

and can be an "open" one or a "crossed" one, which latter has to be "cleared" (credited to the account). Seventeen of the largest London Banks<sup>1</sup> have agreed not to pay in cash the cheques drawn on them "crossed," but to compensate ("clear") them. In this way annual payments amounting to £15,000,000,000 sterling are compensated; the daily balances of one bank against another are settled by cheques on the Bank of England, which acts as gold reservoir. This system of payment obviously saves much trouble and time, and does away with the actual handling of the coins, and the loss of metal connected with it.

The English stamp on bills of exchange, payable in the United Kingdom, is  $\frac{1}{2}\%$ , and for bills circulating in Great Britain but drawn and payable abroad  $\frac{1}{4}\%$ . Bills must be left 24 hours for acceptance, dishonoured bills must be "noted" on the day they become payable, while the protest can be made out afterwards. A bill drawn from abroad, and merely sent for acceptance, does not require the English bill stamp, which is only affixed as soon as the first English endorsement takes place. Bills payable abroad, and already stamped in the foreign country, are usually sold at a trifle better rate.

The year is reckoned at 365 days, while on the Continent only 360 days are taken.

The brokerage for bills is fixed at  $1\%$ .

The London foreign bill market is held every Tuesday and Thursday from 1.30 to 2.30 in the Court of the Royal Exchange ("Change"), while on the Continent foreign bills are negotiated within the Bourses themselves during the business hours of the stock market.

<sup>1</sup> Of which the following four banks are the most important:—

Lloyd's Bank with about £76,000,000 deposits.

London County and Westminster Bank with about £72,000,000 deposits.

London City and Midland Bank with about £71,000,000 deposits.

National Provincial Bank with about £64,000,000 deposits.

The "usance"—the time for which bills on London are drawn—is the following :—

For bills from Germany and Holland, 1 month's date.
,,    Paris, Geneva, Malta, 30 days' date.
,,    Spain and Portugal, 2 months' date.
,,    Italy, 3 months' date.
,,    New York, 60 days' sight, or 75 days' date.
,,    Sweden, 75 days' date.
,,    South America, 90 days' sight.
,,    China, Japan, and India, 4 months' or 6 months' sight.

Bills may also be drawn "documentary," that is accompanied by documents (shipping and insurance) showing the basis of the bill.

The London list of "course of exchange" quotes foreign bills either in English money or in foreign money.

**In English money** are quoted :—

Bills payable in Russia, Spain, and Portugal.

**In foreign money** are quoted :—

Bills payable in all the other foreign countries.

All these bills are quoted for 3 months with the exception of bills on Holland and France, for which a cheque-price is also given.

The above list does not include bills payable in Buenos Ayres, Valparaiso, Rio de Janeiro, Yokohama, Shanghai, Hong-Kong, Calcutta, and Bombay, in which transactions rarely take place at rates expressed in **English money**.

**In calculations connected with bills the two following well-known axioms must always be borne in mind :—**

**(1st) Only quantities of exactly the same kind can be compared.**

**(2nd) Things which are equal to the same thing are equal to one another.**

The price of a bill falling due in 3 months cannot

be compared right out with a bill payable at sight. To make a comparison possible, it is necessary to bring the prices of both to the same level, either to quote both for 3 months, or for sight-bills. We prefer for various reasons to reduce all prices of long bills to the prices of cheques. In order to do this, we have to find out the **cash value** of the long bills under examination, that is, we have to find out the exact interest (discount) at the Bank rate of the country where the bill is payable, and

(a) **to add** the discount in case the quotation is in **English money**, or

(b) **to subtract** the discount in case the quotation is in **foreign money**.

**For instance:—**

(a) **A bill on Russia is quoted “25,”** read:—

“1 rouble payable in 3 months costs 25d.”

therefore, 1 rouble payable immediately, at sight, is worth **more**, that is to say 25d. plus the interest these 25d. employed in Russia would yield in 3 months at the discount rate in Russia, which is fixed by the Russian State Bank.

We find the discount would be at the present rate of  $4\frac{1}{2}\%$  per annum  $= \frac{25d. \times 4\frac{1}{2} \times \frac{3}{12}}{100} = \frac{25 \times \frac{4\frac{1}{2}}{4}}{100} = \frac{25 \times 1\frac{1}{8}}{100} = \frac{28\frac{1}{8}}{100}d.$ , and the price of a bill payable at sight (cheque) would consequently be equal to  $25 + \frac{28\frac{1}{8}}{100} = 25\cdot28125d.$

(b) **A bill due in 3 months, payable in France, is quoted 25·40, that is**

frances 25·40 payable in 3 months = £1 ; its cash value would therefore be **below** this price, that is to say **minus** the discount for 3 months, which is fixed by the Bank of France. At the present rate of 3 %, the discount for a bill of fr. 25·40, payable in 3 months, would amount to—

$$\frac{\text{fr. } 25\cdot40 \times 3 \times \frac{3}{12}}{100} = \frac{25\cdot40}{100} \times \frac{3}{4} = 0\cdot19,$$

$$\begin{array}{r}
 \text{and therefore the cash value of the bill} = \text{fr. } 25\cdot 40 \\
 \text{less discount} = ,, \quad 0\cdot 19 \\
 \hline
 \text{fr. } 25\cdot 21
 \end{array}$$

**A clear understanding of the relations between short and long dated bills will facilitate the calculations shown further on.**

The London newspapers publish every Wednesday and Friday, with the list of "course of exchange," a table containing the telegraphed exchanges on London from the various commercial centres of the world, thus facilitating the comparison of prices.

The following tables represent a cutting from "The Times":—

Amsterdam, etc.	...	...	...	...	12 1 $\frac{1}{8}$	12 1 $\frac{5}{8}$
Do., three months...	...	...	...	...	12 3 $\frac{5}{8}$	12 4 $\frac{1}{8}$
Antwerp and Brussels	...	...	...	...	25 43 $\frac{3}{4}$	25 48 $\frac{3}{4}$
Hamburg	...	...	...	...	20 66	20 70
Berlin, etc.	...	...	...	...	20 66	20 70
Paris, cheques	...	...	...	...	25 18 $\frac{3}{4}$	25 23 $\frac{3}{4}$
Do., three months...	...	...	...	...	25 38 $\frac{3}{4}$	25 43 $\frac{3}{4}$
Switzerland	...	...	...	...	25 43 $\frac{3}{4}$	25 48 $\frac{3}{4}$
Austria	...	...	...	...	24 22	24 27
St. Petersburg and Moscow	...	...	...	...	24 $\frac{7}{8}$	25
Genoa, etc.	...	...	...	...	25 45	25 50
Madrid, Barcelona, etc.	...	...	...	...	35	35 $\frac{1}{4}$
Lisbon—Oporto	...	...	...	...	41 $\frac{1}{8}$	42 $\frac{5}{8}$
Copenhagen—Christiania—Stockholm	...	...	...	...	18 43	18 47

The following exchanges on London were received by telegraph :—

Paris, cheques	...	...	...	...	...	25f.	19½c.
Brussels, do.	...	...	...	...	...	25f.	23c.
Berlin, sight ...	...	...	...	...	...	20m.	45½pf.
Do., 8 days	...	...	...	...	...	20m.	43pf.
Vienna, sight...	...	...	...	...	...	23k.	95h.
Amsterdam, sight	...	...	...	...	...	12fl.	06½c.
Madrid, sight	...	...	...	...	...	33p.	71
Italy, sight ...	...	...	...	...	...	25 lire	16c.
Lisbon, sight...	...	...	...	...	...	42½d.	
St. Petersburg, 3 months	...	...	...	...	...	93r.	75
Bombay, T.T.	...	...	...	...	...	1s.	4½d.
Calcutta, T.T.	...	...	...	...	...	1s.	4½d.
Hong-Kong, T.T.	...	...	...	...	...	1s.	9d.
Shanghai, T.T.	...	...	...	...	...	2s.	5½d.
Yokohama, 4 months	...	...	...	...	...	2s.	0½d.
Rio de Janeiro	...	...	...	...	...	15½d.	
Valparaiso, 90 days ...	...	...	...	...	...	11d.	
Buenos Ayres, gold premium	...	...	...	...	...	127p.c.	
Do., paper dollar...	...	...	...	...	...	20·97d.	

The following are the rates for money current on the principal Foreign markets :—

	Bank Rate.	Open Market.		Bank Rate.	Open Market.
Paris - -	3	2 $\frac{7}{8}$	Madrid and Spanish Bank		
Berlin and German Bank places - -	4	3 $\frac{1}{2}$	places - -	4 $\frac{1}{2}$	3 $\frac{1}{2}$
Amsterdam -	3 $\frac{1}{2}$	3 $\frac{3}{8}$	Lisbon - -	5 $\frac{1}{4}$	5
Vienna - -	3 $\frac{1}{2}$	3 $\frac{3}{8}$	Geneva - -	4 $\frac{1}{2}$	3 $\frac{5}{8}$
Rome and Italian Bank places - -	5	4	Copenhagen -	4 $\frac{1}{2}$	4 $\frac{1}{2}$
St. Petersburg -	4 $\frac{1}{2}$	nom.	Stockholm -	4 $\frac{1}{2}$	4 $\frac{1}{2}$
			Christiania -	5	4 $\frac{1}{2}$
			Bombay - -	3	—
			Calcutta - -	3	—

We find in these tables :—

(a) The London quotation of St. Petersburg (Bills on St. Petersburg) 25d.

(b) The St. Petersburg quotation of London (Bills on London) r. 93·75.

We will compare the two, and find their difference.

The first means 25d. cash for 1 rouble, payable in 3 months; the second means r. 93·75 cash for £10, payable in 3 months, the Bank of England rate being 4% ; the Russian Bank rate being 4 $\frac{1}{2}$ %.

roubles  $x$  = £10, 3 months

3 m. £100 = £99 cash

cash £1 = 240d.

cash 25d. = 1 rouble, 3 months

3 m. roubles 100 = 98·88 r. cash

$$\underline{x = 93\cdot975}$$

The London quotation 25 therefore corresponds to the St. Petersburg quotation 93·975, and as the actual quotation in St. Petersburg is only 93·75, there is a difference of 0·225, or about  $\frac{1}{4}$ %, consequently we receive more Russian money— $\frac{1}{4}$ % more—for £1 in London than in St. Petersburg.

Supposing we had a debit balance in St. Petersburg to settle: we should owe money in St. Petersburg, so it would be more profitable to buy bills on St. Petersburg in London, and to remit them to St. Petersburg, than to order our business friend in St. Petersburg to draw upon us.

In case we should have a balance in our favour in St. Petersburg, and wished to dispose of it, we should then prefer to buy in St. Petersburg bills on London (also called "**returns**") instead of drawing against it from London. **We would invite the reader not to go any further until that example is perfectly clear. When this is the case, then the following calculations will be found easy enough.**

We will now compare the price of bills **on** London in the various countries with the exchange rates of these countries **in** London.

## HOLLAND.

(AMSTERDAM.)

Amsterdam and Rotterdam quote all foreign bills in Dutch currency. The quotation is given for 3 months' bills. The bills on London, Paris, Germany, and Switzerland form an exception. This can be seen from the following copy of the Amsterdam price list:—

Parijs	-	-	k. fl. 47·88 $\frac{3}{4}$	Italie	-	-	3 m. fl. 47·50
"	-	-	2 m. fl. 47·55	Petersburg	-	-	3 m. fl. 126
Belg. Bankplaatsen	-	-	k. fl. 47·85	Weenen	-	-	3 m. fl. 49·75
"	-	-	3 m. fl. 47·35	Oostenrijksche B.	-	3 m. fl. 49·50	
Zwitsersche "	-	-	k. fl. 47·82 $\frac{1}{2}$	Pruisische B.	-	-	k. fl. 59·00
"	-	-	3 m. fl. 47·20	"	B.	-	3 m. fl. 58·27 $\frac{1}{2}$
Spanje	"	-	3 m. fl. 1·71	Londen	-	-	k. fl. 12·06 $\frac{1}{4}$
Portugal	"	-	3 m. fl.—	"	-	-	2 m. fl. 11·96

London quotes Amsterdam (Bills on  $\begin{cases} \text{sight} = 12\cdot1\frac{3}{8} \\ \text{Amsterdam} \end{cases}$  (1) for  $\begin{cases} 3 \text{ m.} = 12\cdot3\frac{7}{8} \\ \text{London} \end{cases}$  (2)

Amsterdam gives the price for London  $\begin{cases} \text{short} = 12\cdot06\frac{1}{4} \\ \text{(Bills on London) for} \end{cases}$  (3)  $\begin{cases} 2 \text{ m.} = 11\cdot96 \\ \text{London} \end{cases}$  (4)

We will compare these four quotations :—

The London prices are expressed in florins and stuivers

(1 stuiver = 5 cents, see page 31), and the London quotations are equal to :—

(1) 12·06875 and

(2) 12·19375

The cash value of the 3 m. bill would be, at the Amsterdam money rate of  $3\frac{3}{8}\%$ . (according to the above table),  $12\cdot19375 - \left(\frac{12\cdot19375}{100} \times \frac{3\frac{3}{8}}{4}\right) = 12\cdot19375 - \left(\frac{12\cdot19}{100} \times \frac{27}{32}\right) = 12\cdot19375 - 0\cdot103 = 12\cdot09$ .

The Amsterdam quotation of London bills is for 2 months and "short" (viz. date). The price of London cheque corresponding to the price of 2 months bills of 11·96 would be at a London money rate of 3 %.

	fl. 11·96
plus 3 % interest for 2 m. = $\frac{1}{2}\%$ , say	$\text{,} \quad 0\cdot06$
	<hr/> <hr/> fl. 12·02

We have therefore the following four equations :—

According to (1) fl. 12·06875 cash = £1 cash

„ „ (2) „ 12·09 „ = „

„ „ (3) „ 12·0625 „ = „

„ „ (4) „ 12·02 „ = „

Therefore plan (2) gives for £1 the most Dutch money, and „ (4) „ £1 „ least „ „,

Plan (2) would therefore be the most suitable for transferring money from London to Amsterdam; plan (4) would therefore be the most suitable for transferring money from Amsterdam to London; the former is also described as account-settler by **remittances**, the latter as account-settler by **drafts or returns**.

For money orders to Paris ("versements") the buyer bonifies 8 days' interest at the Paris discount rate.

Stamps for bills drawn and payable out of Holland, circulating only by way of endorsement  $\frac{3}{10}\%$ ., otherwise  $\frac{7}{10}\%$ .. The year is taken at 360 days. Bills on London are dealt in on every Tuesday and Friday, other bills on every Monday and Thursday at 1 p.m.

Brokerage  $\frac{1}{2} - 1\%$ ..

## BELGIUM.

(ANTWERP AND BRUSSELS.)

Brussels in London:  $25\cdot46\frac{1}{4}$  three m. for £1 cash, London in Brussels:  $25\cdot23$  cash for £1 cash, therefore fr.  $25\cdot46\frac{1}{4}$  three m. = fr.  $25\cdot23$  cash, and as the open market rate at Brussels is  $3\frac{1}{4}\%$ ., the discount of a bill of  $25\cdot46\frac{1}{4}$  would amount to  $\frac{25\cdot4625}{100} \times \frac{3\frac{1}{4}}{4} = \frac{25\cdot4625}{100} \times \frac{13}{16} = 0$  fr. 2069 c., and the **Cash value** would be  $25\cdot4625$

less	$0\cdot2069$
—————	
$25\cdot2556$	

**Conclusion.** It would be cheaper to buy for remittance purposes "long Brussels" than drawing on London, and the saving would amount to  $2\frac{1}{2}$  centimes ( $25\cdot255 - 25\cdot23$ ) or be equal to  $1\%$ ..

As "return" we could take cheque London.

Brussels and Antwerp quote all foreign bills for short paper.

Stamp for bills circulating in the kingdom but drawn and payable out of Belgium  $\frac{1}{4}\%$ .; otherwise  $\frac{1}{2}\%$ .. Brokerage  $\frac{3}{4}\%$ .. paid by the seller.

## GERMANY.

(BERLIN, HAMBURG, ETC.)

All foreign bills in Berlin are quoted in German currency for 8 days or 2 months' date, with a few exceptions which

can be seen from the following copy of the Berlin price list :—

Amsterdam	-	-	fl. 100	8 Tage	3 %	m. 169-00
Do.	-	-	"	2 Mon.	"	m. 168-25
Brüssel	-	-	fr. 100	8 Tage	"	m. 80-95
Do.	-	-	"	2 Mon.	"	m. 80-70
Budapest	-	-	k. 100	8 Tage	3½ %	m. 85-20
Do.	-	-	"	2 Mon.	"	m. 84-70
Italien	-	-	l. 100	10 Tage	5 %	m. 80-90
Do.	-	-	"	2 Mon.	"	m. 80-20
Copenhagen	-	-	kr. 100	8 Tage	4½ %	m. 112-30
Lisbon	-	-	milr. 1	14 Tage	4 %	—
Do.	-	-	"	3 Mon.	"	—
London	-	-	£1	vista	—	m. 20-4575
Do.	-	-	£1	8 Tage	3 %	m. 20-43
Do.	-	-	£1	3 Mon.	"	m. 20-285
Madrid	-	-	pes. 100	14 Tage	4½ %	m. 64-75
New York	-	-	\$1	vista	—	m. 4-185
Do.	-	-	\$1	2 Mon.	—	—
Paris	-	-	fr. 100	8 Tage	3 %	m. 80-95
Do.	-	-	"	2 Mon.	"	m. 80-80
St. Petersburg	-	-	r. 100	8 Tage	5½ %	m. 215-85
Do.	-	-	"	2 Mon.	"	m. 212-50
Schweiz.	-	-	fr. 100	8 Tage	3½ %	m. 80-95
Do.	-	-	"	2 Mon.	"	m. 80-60
Scandinavia	-	-	kr. 100	10 Tage	4½ %	m. 112-30
Warschau	-	-	r. 100	8 Tage	5½ %	m. 215-85
Wien	-	-	k. 100	8 Tage	3½ %	m. 85-25
Do.	-	-	"	2 Mon.	"	m. 84-65
Reichsbank-Disconto				-	4 %	
Privat-Disconto				-	3½ %	

Berlin in London : 20·68 three m. for £1 cash (1)

London in  $\begin{cases} \text{sight} & : 20\cdot45\frac{3}{4} \text{ cash for cheque £1 (2)} \\ 8 \text{ days} & : 20\cdot43 \text{ cash for £1—8 days' date (3)} \\ 3 \text{ months} & : 20\cdot285 \text{ cash for £1—3 m. d. (4)} \end{cases}$

Open market rate in Berlin 3½ %.

London rate - - - 4 %.

A bill on London, 8 days' date, is, on account of the 3 days' grace, only payable after 11 days, the price for sight bills on London therefore is equal to the price of the former kind of bills **plus** 11 days 4 % interest for 20·43 (2½ pf.).

(1) 20·68 for 3 m. 3½ % p.a. or  $\frac{7}{8} \%$  for 3 months.

less 0·181  $\frac{20\cdot68}{100} \times \frac{7}{8} = 18\cdot10 \text{ pf.}$

Cash value = 20·499

$$\begin{array}{rcl}
 (4) & 20.285 \text{ for 3 m. London at } 4\% \text{ p.a. or } 1\% \text{ for 3 m.} \\
 \text{plus} & 0.202 & 1\% \text{ of } 20.285 = 0.202. \\
 & \hline
 & 20.487
 \end{array}$$

We have therefore the four equations :—

- (1) m. 20.499 cash = £1 cash
- (2) m. 20.4575 , , = , ,
- (3) m. 20.455 , , = , ,
- (4) m. 20.487 , , = , ,

The cheapest remittance to Germany would be by plan (1), by way of long bills on Germany, and the most profitable return from Germany by plan (3), by way of 8 days' date bills on London.

In Berlin there is also a large market in Russian, Austrian, and English exchanges for forward delivery (within 1 or 2 or 3 months' time). Bills on Vienna and St. Petersburg are daily dealt in, while bills on the other places are only negotiated on Tuesdays, Thursdays, and Saturdays.

Bill stamp  $\frac{1}{2}\%$ ; foreign bills circulating in Germany but payable abroad do not pay a German stamp.

Brokerage  $\frac{1}{2}\%$  paid by the buyer.

## AUSTRIA.

Vienna in London : 24.24 $\frac{1}{2}$  payable in 3 m. for £1 cash.

London in Vienna : 23k.95h. cash, for £1 cash, therefore k. 24.24 $\frac{1}{2}$  payable in 3 m. = k. 23.95 cash, and at  $3\frac{3}{8}\%$ . open market rate in Vienna :—

$$\begin{aligned}
 & 3\frac{3}{8}\% \text{ for 1 year or } \frac{27}{32}\% \text{ for 3 m.} \\
 & \frac{24.245}{100} \times \frac{27}{32} = 20.45h.
 \end{aligned}$$

**Cash value :** 24.245 less 0.2045 = **24.04**, difference between 24.04 and 23.95 = 9 heller or  $3\frac{1}{2}\%$ .

**Conclusion.** It would be cheaper for remittance purposes to buy "long Vienna" than drawing on London, and for returns it would be advisable to ask for cheque London.

In former years large transactions took place daily in bills on London, Paris, and Berlin for forward delivery, but these with the introduction of the gold standard have naturally considerably diminished.

All bills are quoted in kronen currency in the form of cheques, and credited as such minus discount for the time the bill has still to run, and which is calculated at the foreign Bank rate.

Stamp for bills and their duplicates payable in Austria 1  $\frac{1}{2}$   $\%$ ; bills payable abroad, free. Brokerage  $\frac{1}{2}$   $\%$ .

## PARIS.

On 1 May, 1907, a new method for the quotation of foreign bills was introduced. Till then some foreign bills were dealt in on the basis of the price for 3 months' bills, and some on the basis of the cheque price. Today, however, the quotation is a uniform one, and **all bills are negotiated on the basis of the cheque price.** The seller of the bill has to bonify to the buyer the interest for the days the bill has still to run, which interest has to be calculated at the bank rate of the place where the bill is payable. The prices are given in francs for 100 units of the foreign currency, with the exception of the quotation of London (for £1) and Spain (500 pesetas = 100 old piastres).

Below follows a specimen of the quotations:—

Change.	Chéque-Versement Papier Court.	Papier à Trois Mois.	Escompte à L'Etranger.
Londres - -	25·20 à 25·23	25·24 à 25·29	5 per cent.
Allemagne - -	123 " 123 $\frac{1}{4}$	123 $\frac{1}{8}$ " 123 $\frac{3}{8}$	5 "
Belgique - -	99 $\frac{1}{6}$ " 99 $\frac{1}{6}$	99 $\frac{3}{4}$ " 99 $\frac{7}{8}$	3 $\frac{1}{2}$ "
Espagne - -	456 " 461	454 " 459	4 $\frac{1}{2}$ "
Hollande - -	207 $\frac{1}{2}$ " 208	207 $\frac{5}{8}$ " 208 $\frac{1}{8}$	3 "
Italie - -	99 $\frac{3}{8}$ " 99 $\frac{1}{2}$	99 $\frac{7}{16}$ " 99 $\frac{9}{16}$	5 "
New York - -	515 " 518	513 $\frac{1}{2}$ " 516 $\frac{1}{2}$	4 "
Portugal - -	483 " 493	481 " 491	6 "
St. Petersbourg - -	266 $\frac{1}{4}$ " 268 $\frac{1}{4}$	265 $\frac{1}{4}$ " 267 $\frac{1}{4}$	5 $\frac{1}{2}$ "
Suisse - -	99 $\frac{1}{6}$ " 100 $\frac{1}{6}$	100 " 100 $\frac{1}{8}$	3 $\frac{1}{2}$ "
Vienne - -	104 $\frac{1}{2}$ " 104 $\frac{3}{4}$	104 $\frac{9}{16}$ " 104 $\frac{11}{16}$	4 "

Although the "Agents de Change" never deal in foreign bills, they publish in their daily market report the prices of foreign bills, which are fixed by a committee of four bankers (or representatives of banks) and three brokers. The bills are divided into : cheques—money orders—short bills and 3 months' bills, and the prices of the latter are generally higher than the prices of cheques, which seems a paradox. But if we bear in mind that the cash value of a long bill depends upon the discount rate of its paying place, and that the open market rate is usually lower than the official bank rate, we shall soon be able to explain this discrepancy.

A long bill, for instance, payable in a town where the bank rate is 5 %, and the open market rate 4 %, will be credited if discounted with the bank, minus a discount of 5 %, and if negotiated in the open market, minus a discount of 4 %.

In the latter case we have to pay 1 % per annum less, i.e.  $\frac{1}{4}$  % less for three months; therefore the greater the difference is between the bank rate and the open market rate, the higher the price the buyer of a long bill can pay for it.

Paris quotes for the foreign bills a buying and a selling

rate, and the actual business takes place at prices between those two rates, mostly at the average rate. "Short" bills means bills which have still 15 days to run. "Versements" are "compensated," i.e. the payments in Paris, and in the town abroad take place on the same day.

Paris in London for cheques =  $25\cdot21\frac{1}{4}$  - - - - (1)

„ „ for 3 months =  $25\cdot41\frac{1}{4}$  - - - - (2)

London in Paris for cheques =  $25\cdot19\frac{1}{2}$  - - - - (3)

Open market rate in Paris -  $27\frac{1}{8}\%$ .

$\frac{27}{4} = \frac{23}{32}\%$ , discount for  $25\cdot41\frac{1}{4}$  = 18c.

**Cash value of  $25\cdot4125$**

less 0·18

$25\cdot2325$

We have therefore Paris cheque in London =  $25\cdot21\frac{1}{4}$  (1)

„ „ „ „ „ „ =  $25\cdot2325$  (2)

(by way of long bills)

„ „ „ Cheque London in Paris =  $25\cdot195$  (3)

The cheapest of these three quotations for remittances is therefore the purchase of "long Paris" in London,<sup>1</sup> and the cheapest return a cheque on London.

The difference between remitting to

Paris at - - - - -  $25\cdot2325$

and drawing on London at  $25\cdot195$

would amount to 0·0375c. or  $1\frac{1}{2}\%$ .

Bills payable in France need  $\frac{1}{2}\%$  stamp, foreign bills only passing through France  $\frac{1}{4}\%$ , cheques if payable on the place of issue 10c., otherwise 20c. Bills due on a Sunday or holiday become due on the preceding day; the

<sup>1</sup> The acceptances of a few Paris firms, forming the "haute banque," command a better rate, as they can be discounted about  $\frac{5}{8}\%$  below the current French market rate.

seller has to bonify the bill stamp necessary in the country where the bill is payable. Brokerage  $\frac{1}{2}\%$  -  $\frac{1}{8}\%$ .

### GREECE.

(1 drachma = 100 lepta.)

Although bills on Greece appear rarely on the London market, we will, nevertheless, mention them, as Greece is since 1868 a member of the "Union latine". Greece has, therefore, the same monetary system as France, the unit is called drachma. The metallic standard has experienced many changes; in 1898 the premium on gold rose to 65 %, while it is at the present moment barely 2 %.

At a gold premium of 2 %, **cheque London** must quote in Athens **25.72** according to the following calculation:—

Currency drachma  $x = £1$

$1 = 25.22$  dr. gold

$100 = 102$  curr. dr.

and the price of a **bill** of £1 for **3 months** on London at a London money rate of 3 % must be:  $25.72 - 0.19 = 25.53$  drachma.

Bill stamp  $\frac{1}{2}\%$ , brokerage  $\frac{1}{2}\%$ .

### ITALY.

Italy (Genoa) quotes in London  $25.47\frac{1}{2}$  payable in 3 months for £1 cash.

London in Italy quotes 25.16 for cheque £1 cash.

Open market rate in Rome 4 %, therefore

$25.475$

less  $\frac{4}{4} = 1\% = 0.254$

$25.221$ , and as cheque London

quotes  $25.16$

there is a difference of  $0.061$  (or nearly  $\frac{1}{4}\%$ ) in favour of "long paper".

**Conclusion.** For remittances the cheaper way would be by way of long paper, for returns the purchase of cheques London in Italy.

With the exception of bills on Austria, which are quoted for 30 days' date, all the other prices are given for 3 months' date bills.

Bill stamp  $1\%$ , brokerage  $\frac{1}{2}\%$ .

## SPAIN.

Madrid in London:  $43\frac{3}{4}$ d. for 1 piastre (5 pesetas) payable in 3 months.

London in Madrid: 26.90 (pesetas cash) for £1 cheque. Open market rate in Madrid  $4\%$ .

Therefore  $\frac{4}{4} = 1\%$  and of  $43.75 = 0.44$ .

5 pesetas cash would cost in London 43.75d.

$$\begin{array}{r} \text{plus } 0.44\text{d.} \\ \hline 44.19\text{d.} \end{array}$$

For 44.19d. cash we would be able to buy in Madrid 4.953 pesetas according to the following rule:—

$$\begin{array}{r} \text{pesetas } x = 44.19\text{d.} \\ 240 = 26.9 \text{ pesetas.} \\ \hline x = 4.953 \end{array}$$

We would, therefore, receive in London for

$$\begin{array}{r} 44.19\text{d. cash, pesetas 5 cash,} \\ \text{and in Madrid for } \text{,,} \qquad \text{,,} \qquad 4.953 \\ \hline \text{pesetas } 0.047 \end{array}$$

i.e. nearly 1% less.

We would, therefore, buy in London bills on Madrid for remittances, and buy in Madrid cheque London for returns.

Although the trade relations between England and Spain are far more intimate than those between France and Spain, "Versement Madrid" (money order on Madrid) is not regularly dealt in on the London market, but daily in Paris, and generally at prices which allow profitable arbitrage operations.

We give the following example: The Paris parity for "Versement Madrid" with a London quotation of **43 $\frac{7}{8}$ d.** for "long Madrid" and the Paris quotation of **25·25** for cheque London must be fr. **466·21** according to the following calculation:—

Cash fr. $x$	=	500 pesetas cash
100	=	101 pesetas 3 m.
5	=	43·875d. cash
240	=	25·25 fr. cash,

while in reality the simultaneous quotation for "Versement Madrid" was fr. 472, i.e. 1 $\frac{1}{4}$  % above parity.

On that very day, therefore, it would have been profitable to buy "long Madrid" in London, to remit it to Madrid for discount, and to draw against the proceeds from Paris, ordering Paris at the same time to buy, and to remit cheque London.

By so doing we would have profited, have kept our agents in Paris and Madrid busy, and might reasonably expect an order from them in return. To keep within moderate limits, and not to employ outside-prices, we fix our calculations on the following three prices:—

3 months Madrid in London	-	44
Versement ,,, Paris	-	472
Cheque London ,,,	-	25·25

Let us take £5000 as capital employed in the operation.

We should have bought for it a bill of pesetas 136.363.65, and sent the same to Madrid for discount. Madrid would have charged 4 % discount per annum, or 1 % for 3 months pesetas 1363.64

½ % discount commission	,,	34.10		
Spanish bill stamp	,,	105		
(¾ % on pesetas 140,000)				
1 % Banker's commission	,,	<u>136.36</u>	=	1639.10
and given credit for				<u>pesetas 134.724.55</u>

Our Paris agent had orders to sell a money order on Madrid for 134.724.55, and to remit to us the proceeds in cheque London.

Paris would have sold pes. 134.724.55 at 472 = fr. 127.179.97, and debited  $\frac{1}{8}$  % brokerage fr. 158.97

1 % commission	,,	127.18	=	,,	286.15
					<u>fr. 126.893.82</u>

for which amount at 25.25 we would have received - - - - - £5025 10 0

In London we had to pay

for the bill	-	-	£5000	0	0
plus 1 % brokerage	-	-	5	0	0
					<u>5005 0 0</u>
difference			-	-	<u>£20 10 0</u>

and the accounts in Madrid, Paris, and London would have been balanced.

We may find the result of the operation also in a shorter way. We ask for the rate of exchange the versement was based upon:—

$$\begin{aligned}
 d. x &= 5 \text{ pes. 3 m.} \\
 100 &= 99 \text{ pes. cash} \\
 500 &= 472 \text{ fr.} \\
 25.25 &= 240d. \\
 x &= 44.41
 \end{aligned}$$

As we received 44·41d. for every 5 pesetas, and actually gave only 44d. the margin  
was 0·41d. or 0·925 % of 44.

The expenses amounted to :—

Brokerage in London	$1\frac{1}{2}\%$	=	0.100
,,    ,,    Paris	$\frac{1}{8}\%$	=	0.125
Commission,,,,	$1\frac{1}{2}\%$	=	0.100
,,    ,,    Madrid	$1\frac{1}{2}\%$	=	0.100
,,    ,,    ,,	$\frac{1}{4}\%$	=	0.025
Spanish bill stamp	$\frac{3}{4}\%$	=	0.075
			0.525
which deducted from			0.925
			leaves 0.400 net profit, or on

## PORTUGAL

Lisbon in London: 47½d. (cash pence for 1 milr. 3 m.)

London in Lisbon : 47d (cash pence for 1 milr. 5 milr.)

Open market rate in Lisbon 5 %

$\frac{5}{2} \equiv 11\%$ , which on  $47\frac{1}{2} = 0.59$ .

therefore 47.25

± 0.59

47·84d. at sight

London in Lisbon 48

48

difference 0.16d. or  $\frac{1}{3}\%$ .

It would therefore be more profitable to remit "long Lisbon" instead of drawing upon London; for returns we should buy cheque London.

Lisbon quotes	London for 30-60-90 days' date in pence for 1 milreis.
	Amsterdam for 3 m. in florins for 16 milreis.
	Paris for 8 days and 3 m. in reis for 3 francs.
	Hamburg and Italy for 3 m. in reis for 1 mark and 1 lire.
	Spain for 8 days' sight for 5 pesetas.

Bills drawn in Portugal, payable abroad, pay a stamp of  $\frac{1}{5}\%$ , all other bills  $1\%$ , brokerage  $1\%$ .

The Lisbon quotation of 48 for London corresponds to a gold premium of  $11\frac{1}{8}\%$ ; according to the following calculation:—

$$\begin{array}{rcl}
 \text{currency milr. } x & = & 100 \text{ milr. gold} \\
 (\text{see p. 37}) & 4\frac{1}{2} & = \text{£1} \\
 & 1 & = 240\text{d.} \\
 & 48 & = 1 \text{ milr. c.} \\
 \hline
 x & = & 111\cdot11
 \end{array}$$

or gold premium =  $11\frac{1}{8}\%$ .

## COPENHAGEN.

(CHRISTIANIA AND STOCKHOLM.)

London quotes Copenhagen for 3 months' bills at 18·45, the open market rate in Copenhagen being  $4\frac{1}{2}\%$  per annum (or  $1\frac{1}{8}\%$  for 3 months), the discount amounts to 0·21, and therefore cheque Copenhagen =  $18\cdot45 - 0\cdot21 = 18\cdot24$ , which rate shows no margin against the Copenhagen quotation of London.

All foreign bills are quoted in Scandinavian money and for short and 3 months' bills. The bill stamp is only  $\frac{1}{5}\%$ , and foreign bills payable out of Denmark pay no stamp.

**Christiania** quotes London like Copenhagen.

**Stockholm** deals in short and 90 days' date bills on London.

Inland bills pay no stamp, foreign bills for any amount only 1 krona.

## UNITED STATES.

The prices of

- (a) Cable transfer London = 4·84½
- (b) Demand bills „ = 4·84
- (c) 60 days' sight bills „ = 4·80½
- (d) „ „ „ Berlin = 94
- (e) „ „ „ Paris = 5·23

are daily cabled from New York, and published by the newspapers.

They express the equivalent of £1 or marks 400 in dollars, and the equivalent of \$1 in French money.

In order to compare these prices, we have to bring all of them to the level of the cable transfer price, based on the present London discount rate of 4 %.

But before we proceed, we will remark that New York quotes sterling exchange in four decimals, and calls the third and fourth decimal "points". Therefore, when cable transfer London quotes, for instance, 4·8425 against 4·8405 the previous day, it is then said that "sterling" has risen "20 points".

(b) Demand bill = 4·84, which is paid in London  
7 days later than cable transfer, therefore

$4\%$  interest 7 days = 0·004  
parity =  $\frac{4\cdot844}{4\cdot845}$  against cable transfer price  
4·845,

showing consequently no margin whatever.

(c) The price of a 60 days' sight bill plus 4 % interest for 70 days (60 days the bill has to run plus 7 days, the time for the voyage from New York to London, plus 3 days, the

days of grace) would be the parity of the cable transfer price, therefore

$$\begin{array}{r}
 4.8025 \\
 + 4 \% \text{ interest 70 days} = 0.0368 \\
 \hline
 4.8393 \text{ against cabled price}
 \end{array}$$

of 4.845.

The difference between the two prices

$$\begin{array}{r}
 4.845 \\
 \text{and } 4.8393 \\
 \hline
 \text{amounts to } 0.0057\text{c. or nearly } 1\%.
 \end{array}$$

As the price of demand bills shows no margin whatever against the cable transfer quotation, we can neglect it, and need only consider 60 days' sight bills.

The cheapest way of transferring money from London to New York would therefore be by "cable transfer"; the most profitable way for disposing of a credit balance in New York by asking for a 60 days' sight bill on London.

**(d) and (e) Bills on Paris and Berlin in New York.**

Both places are quoted for 60 days' and 3 days' sight bills, Paris in francs for \$1, Berlin in dollars for 400 marks, but generally only the price for 60 days' sight bills is cabled.

In the first instance, we have to work out the interest for the time these bills have to run until they are actually paid, that is 68 days, such interest calculated at the current discount rates (Paris,  $2\frac{7}{8}\%$ , Berlin,  $3\frac{1}{2}\%$ ).

We find the interest for the Paris bill =  $\frac{5.23}{100} \times 2\frac{7}{8} \times \frac{68}{360}$   
 = 2.8 centimes.

and the interest for the Berlin bill =  $\frac{94}{100} \times 3\frac{1}{2} \times \frac{68}{360}$   
 = 0.62 dollars.

A quotation of Paris in New York 5.23 would therefore correspond to the price of cheque on Paris  $5.23 - 0.028$   
 = 5.202,

and a quotation of Berlin bills in New York 94 would be equal to the price of cheque on Berlin of  $94 + 0.62 = 94.62$ .

The parity price of Paris in New York at the prices :—

$\$4.845 = £1$  cable transfer (in New York),  
and francs  $25.20 = £1$  cheque (in Paris) would be :—

francs  $x = \$1$

$4.845 = £1$

$1 = 25.20$  fr.

$x = 5.201$  for sight Paris, or  
+ 0.028 as before explained.

$5.229$  as New York parity price of 60 days' sight bills on Paris (via London).

The parity price of Berlin in New York at the prices :—

$\$4.845 = £1$  cable transfer (in New York),  
and marks  $20.46 = £1$  cheque on London (in Berlin) would be :—

dollars  $x = 400$  marks

$20.46 = £1$

$1 = 4.845$  doll.

$x = 94.72$  c. for sight Berlin, or  
- 0.62

$94.10$  as New York parity of 60 days' sight bills on Berlin (via London).

As the quotation of Paris is expressed in francs, and „ „ Berlin „ „ dollars, we must naturally **subtract** the discount in the first case from the New York price, and **add** the discount in the second place to the New York price.<sup>1</sup>

In the foregoing calculations we have only compared the prices of foreign bills **on London** in the various markets with the prices of bills on these places quoted **in London**, and we learned how to make the best use of these **direct rates** for the transfer of money from one country to another.

<sup>1</sup> The brokerage for bills which need no stamp, varies from  $\frac{1}{2} \%$  to  $1 \%$ .

But when a foreign market has a large business in various foreign bills, these foreign bills do not always quote at the exact parity price, and a comparison of these prices will show which paper would be more advantageously chosen as remittance or return. In the example given under the heading **Spain** (page 114), it was proved that on that particular day money orders on Spain in Paris were so much wanted above the London parity of Spain, that it paid well to sell in Paris a money order on Spain, covering the sale with the purchase of a long Madrid bill in London.

Therefore, before deciding on a transfer of money to a foreign place with a free bill market, we must not only rely on the direct rate, but must study its quotations, and then exercise our best judgment.

Let us take as instance the

### PARIS BILL MARKET

and its quotations. The rates which we shall find afterwards will no longer be "direct" rates, but "**indirect or arbitrated" rates.** The direct rates (quotation of London in Paris) as already examined, we now leave, and begin at once with bills on:—

### AMSTERDAM,

which are quoted fr. 208 $\frac{3}{4}$  for fl. 100 cheque, and as we know the price of cheque London in Amsterdam (12·10), we have the following calculation:—

$$\begin{array}{r}
 \text{fr. } x = \text{£1} \\
 1 = 12\cdot10 \text{ florins} \\
 100 = 208\cdot75 \text{ fr.} \\
 \hline
 x = 25\cdot26
 \end{array}$$

Bills on Amsterdam therefore quote at the parity of cheque London - - - - - **25·26**

The same method we apply to the other foreign bills.

## BERLIN

is quoted in Paris fr. 123 for 100 marks cheque.

London in Berlin = 20·50 cheque,  
and in the same way as before (20·5 × 1·23),

we find parity - - - - **25·215**

## VIENNA

is quoted in Paris fr. 105 for 100 kr. cheque.

London in Vienna 24·05 cheque,

24·05 × 1·05 = - - - - **25·25**

## ST. PETERSBURG

is quoted in Paris for 3 m. and for "versement" (money order), we take the quotation of the latter—266½.

London in St. Petersburg 93·75 for 3 m. + 4 %.  
per annum.

$$\begin{aligned} &= 93\cdot75 + 1 \% \text{ of } 93\cdot75 \\ &= 93\cdot75 \\ &+ 0\cdot93 \\ &\hline 94\cdot68 \end{aligned}$$

fr.  $x$  = £1 cheque

10 = 94·68 r. cash

100 = 266·5 fr.

$x = 25\cdot232$  - - - - **25·232**

## MADRID

is quoted in Paris for "versement" (sight or money order) 468 (that is to say fr. 468 for pes. 500).

London in Madrid 27 cash.

fr.  $x$  = £1 cash

1 = 27 cash pes.

500 = 468 fr.

$x = 25\cdot272$  - - - - **25·272**

## LISBON

is quoted in Paris fr. 500 for 100 milreis cheque.

London in Lisbon = 48d. cheque

fr.  $x$  = £1 cheque

1 = 240d.

d. 48 = 1 milr. currency

100 = 500 fr.

---

 $x = 25$  - - - - **25**

## ITALY

is quoted in Paris fr. 99·50 for 100 lire cheque.

London in Italy 25·35 cheque.

fr.  $x$  = £1 cheque

1 = 25·35 lire

100 = 99·5 fr.

---

 $x = 25·223$  - - - - **25·223**

## NEW YORK

is quoted in Paris 5·17 for cheque.

London in New York: 4·88 for demand bill.

fr.  $x$  = £1 cash

1 = 4·88 dols.

1 = 5·17 fr.

---

 $x = 25·23$  - - - - **25·23**

These calculations put together show, that on the day they were made

(a) the direct rates worked out at:—

(see page 111)

£1 equal to  $\begin{cases} 25·265 & \text{by way of long bills on London} \\ 25·195 & \text{,, cheque London} \\ 25·2325 & \text{,, long bills on Paris} \\ 25·2125 & \text{,, cheque Paris} \end{cases}$

## (b) the arbitrated rates at:—

<b>£1 equal to</b> <b>francs</b>	25.26	by way of bills on	Amsterdam
	25.215	„ „ „	Berlin
	25.25	„ „ „	Vienna
	25.232	„ „ „	St. Petersburg
	25.272*	„ „ „	Madrid
	25.*	„ „ „	Lisbon
	25.223	„ „ „	Italy
	25.23	„ „ „	New York

The lowest figure, 25, by way of bills on Lisbon, was therefore the cheapest for **returns**, the highest, 25.272, by way of bills on Madrid, the cheapest for **remittances**.

The difference between the lowest and the highest figure shows fr. 0.27, or as much as 1 %, a difference of importance when large amounts of money have to be transferred.

Another large foreign bill market like Paris is

### THE BERLIN BILL MARKET, especially for Russian bills.

We will therefore examine its bill-list, setting aside the direct rates as already treated.

### AMSTERDAM.

London in Amsterdam: 12.06½ cheque.

Amsterdam in Berlin: 169.55 (8 days) +

3½ % p.a. = 169.55 + 0.13 = 169.68.

(f. 100 = m. 169.55).

m.  $x$  = £1 cash

1 = 12.0625 fl.

100 = 169.68 m.

---

 $x = 20.467$  - - - **20.467**

## ST. PETERSBURG.

London in St. Petersburg: 93·75 for 3 m.

4% p.a., or 94·68 cash.

St. Petersburg in Berlin: 213·60 for 3 m.

4½% p.a. or 213·60

(r. 100 = m. 213·60) + 2·40

---

216·00m.  $x$  = £1 cash

1 = 94·68 r. cash

100 = 216 m.

---

 $x$  = 20·45

## VIENNA.

London in Vienna: 23·95½ cheque.

Vienna in Berlin: 85·35 + 8 days 3½% p.a.

= 85·35 + 0·07 = 85·42.

(k. expressed in marks)

m  $x$  = £1 cheque

1 = 23·955 k.

100 = 85·42 m.

---

 $x$  = 20·462

20·462

## PARIS.

London in Paris: 25·175 cheque.

Paris in Berlin: 81·15 for 8 days + 3% p.a.

= 81·20 cheque

(100 fr. in marks)

m  $x$  = £1 cheque

1 = 25·175 fr.

100 = 81·20 m.

---

 $x$  = 20·442

20·442

## NEW YORK.

London in New York: 4·84 demand bill.

New York in Berlin: 4·22.

(\$1 in marks)

$$\begin{array}{r}
 \text{m } x = \text{£1} \\
 1 = 4\cdot84\$ \\
 1 = 4\cdot22 \text{ m.} \\
 \hline
 x = 20\cdot424 \\
 \hline
 & & & & 20\cdot424
 \end{array}$$

## BELGIUM.

London in Belgium: 25·23 cheque.

Belgium in Berlin: 80·60 for 2 m. and  $3\frac{1}{4}\%$  p.a.

$$\begin{array}{l}
 \text{or } \frac{13}{24}\% \text{ for 2 m.} = 0\cdot44\text{c.}, \quad 80\cdot60 + 0\cdot44 \\
 = 81\cdot04.
 \end{array}$$

$$\begin{array}{r}
 \text{m } x = \text{£1} \\
 1 = 25\cdot23 \text{ f.} \\
 100 = 81\cdot04 \text{ m.} \\
 \hline
 x = 20\cdot446 \\
 \hline
 & & & & 20\cdot446
 \end{array}$$

## ITALY.

London in Italy: 25·16 cheque.

Italy in Berlin: 81·25 for ten days + 5% p.a.

$$\text{cheque price} = 81\cdot25 + 0\cdot11 = 81\cdot36.$$

$$\text{Parity: } 81\cdot36 \times 0\cdot2516 = \quad \text{---} \quad \text{---} \quad \text{---} \quad \text{---} \quad 20\cdot47$$

As bills on Spain or Portugal have neither of them a free market in Berlin, we leave them out of our consideration.

The arbitrated rates put together give the following table:—

<b>£1 equal to marks</b>	20·467	in Amsterdam	via Berlin	
	20·45	„ St. Petersburg	„ „	
	20·462	„ Vienna	„ „	
	20·442	„ Paris	„ „	
	20·424*	„ New York	„ „	
	20·446	„ Belgium	„ „	
	20·47*	„ Italy	„ „	

The calculation indicates New York as cheapest, Italy as dearest medium; the former therefore the best for returns, the latter the best for remittances. Of course, all these parities are "**bare parities**," that is, no account has been taken of any expense in connection with the actual transfer of money.

We have already compared the prices which bills on London command on the various markets. We have examined the Paris and Berlin list of foreign bills, and we will now find out the price of every important exchange rate in the various business centres.

I. We will begin with **PAPER ON AMSTERDAM**, and calculate the English equivalent of bills on Amsterdam quoted in the various countries.

#### AMSTERDAM FROM BELGIUM.

$$\text{fl. } 100 = \text{fr. } 208\cdot50 \text{ cheque}$$

$$\text{fr. } 25\cdot23 = \text{£1 cheque}$$

$$\text{fl. } x = \text{£1}$$

$$1 = 25\cdot23 \text{ fr.}$$

$$208\cdot5 = 100 \text{ fl.}$$

---


$$x = 12\cdot10$$


---

12·10

## AMSTERDAM FROM BERLIN.

fl. 100 for 8 days, or 2 m. in marks,

We take 2 months' paper = m. 168.60

Amsterdam rate  $3\frac{1}{2}\%$ , i.e.  $\frac{3\frac{1}{2}}{6} = \frac{7}{12}\%$  for  
2 months, which of 168.60 = 0.98, and  
therefore cheque Amsterdam = 169.58;  
and as £1 = 20.46, we find  $x = \frac{20.46}{1.6958} = 12.065$

## AMSTERDAM FROM PARIS.

fl. 100 cheque = fr. 208.75

and £1 = fr. 25.25

therefore  $x = \frac{25.25}{2.0875} = - - - - 12.096$

## AMSTERDAM FROM VIENNA.

Vienna quotes all foreign bills in form of  
cheques, which for the calculation of  
parities is very convenient.

Amsterdam is quoted 198.75, i.e. kronen  
198.75 for fl. 100 cheque.

London in Vienna : kr. 239.50 (for £10  
cheque)

therefore  $x = \frac{23.95}{1.9875} = - - - - 12.05$

## II. BRUSSELS AND ANTWERP from :

## AMSTERDAM.

100 francs 3 m. = fl. 47.30

£1 = 12.0625

discount rate Amsterdam  $3\frac{1}{2}\%$ .

100 fr. sight =  $47.30 + \left( \frac{3\frac{1}{2}}{4} \% \times 47.30 \right) = 47.30$

+ 0.41

47.71

$x = \frac{1206.25}{47.71} = - - - - 25.27$

## BERLIN.

100 francs 2 m. = m. 80·60

£1 = 20·46

disc. rate at Brussels  $3\frac{1}{4}\%$  p.a. or  $\frac{3\frac{1}{4}}{6} = \frac{13}{24}$   
for 2 m.

$$80.60 \times \frac{13}{24} \% = 0.44, \text{cheque Brussels} = 80.60 \\ + 0.44 \\ \hline 81.04$$

PARIS.

Quotation "  $\frac{1}{4}$  loss," i.e. fr. 100 Belg. money  
= fr. 99.75 French money

£1 = 25·20

### III. BERLIN from:

## AMSTERDAM.

fl. 58.50 for m. 100 - 3 m.

£1 = 12·0625 cheque

discount rate  $3\frac{1}{2}\%$  p.a., or for 3 m.  $= \frac{3\frac{1}{2}}{4} = \frac{7}{8}\%$ .

of 58.50 = 0.51

therefore  $58.50 + 0.51 = 59.01$

$$x = \frac{1206.25}{59.01} = 20.441$$

## BELGIUM.

fr. 123.50 for cheque m. 100

£1 = 25·23

## MADRID.

Pesetas 130 for m. 100 3 m.

£1 = pes. 27

Berlin disc. rate  $3\frac{1}{2}\%$  p.a., for 3 m. =  $\frac{3\frac{1}{2}}{4} = \frac{7}{8}\%$ .

$$\frac{7}{8} \% \text{ of } 130 = 1.14$$

$$\text{therefore } 130 + 1.14 = 131.14$$

## LISBON.

reis 244 for 1 mark 3 m.

d. 48 = 1 milreis

Berlin disc. rate  $3\frac{1}{2}\%$  p.a. or  $\frac{7}{8}\%$  for 3 m.

$$\text{therefore } 244 + 2.12 = 246.12$$

m x := £1

1 = 240d.

48 = 1000 reis

$$246 \cdot 12 = 1 \text{ m.}$$

$x = 20.31$

30.31

## PARIS

fr. 123} for cheque m. 100

£1 = 25·25

$$x = \frac{25.25}{1.2325} = - - - - - \quad \quad \quad \mathbf{20.486}$$

## ST. PETERSBURG.

r. 45.90 for m. 100 three m.

r. 93·75 for £10 - 3 m.

disc. rate in Berlin  $3\frac{1}{2}\%$  p.a. or  $\frac{7}{8}\%$  for 3 m.

,, , St. Petersburg  $4\frac{1}{2}\%$  p.a. or  
 $1\frac{1}{8}\%$  for 3 m.

$$\begin{array}{r}
 45.90 \\
 + 0.40 \\
 \hline
 46.30
 \end{array}
 \quad
 \begin{array}{r}
 93.75 \\
 + 1.06 \\
 \hline
 94.81
 \end{array}$$

$$\begin{array}{rcl}
 m \ x = \text{£}1 \\
 10 = 94.81 \text{ r.} \\
 46.30 = 100 \text{ m.} \\
 \hline
 x = 20.477 & & 20.477
 \end{array}$$

## VIENNA.

$$\begin{array}{rcl}
 \text{kr. } 117 = \text{m. } 100 \text{ cheque} \\
 \text{kr. } 23.95 = \text{£}1 \text{ cheque} \\
 x = \frac{23.95}{1.17} = & - & - & - & - & - & - & 20.47
 \end{array}$$

## IV. VIENNA from :

## AMSTERDAM.

$$\begin{array}{rcl}
 \text{fl. } 50 \text{ for } 100 \text{ k. } 3 \text{ m.} \\
 \text{£}1 = 12.0625 \\
 \text{discount rate in Vienna } 3\frac{3}{8} \% \text{ p.a. or } \frac{33}{4} \% = \\
 \frac{27}{32} \% \text{ for } 3 \text{ m.} \\
 50 + 0.42 = 50.42 \\
 x = \frac{1206.25}{50.42} = & - & - & - & - & - & - & 23.92
 \end{array}$$

## BERLIN.

$$\begin{array}{rcl}
 \text{m. } 85.35 \text{ for } 100 \text{ kr. } 8 \text{ days, or at the Vienna} \\
 \text{discount rate of } 3\frac{3}{8} \% \text{ p.a.} = 85.35 + \\
 0.064 = 85.41 \text{ for cheque.} \\
 \text{£}1 = 20.46 \\
 x = \frac{2046}{85.41} = & - & - & - & - & - & - & 23.955
 \end{array}$$

## PARIS.

$$\begin{array}{rcl}
 \text{fr. } 105 \text{ for cheque k. } 100 \\
 \text{£}1 = 25.25 \\
 x = \frac{25.25}{1.05} = & - & - & - & - & - & - & 24.04
 \end{array}$$



## ST. PETERSBURG.

r. 37·25 for fr. 100—3 m.

r. 93·75 for £10—3 m.

Paris disc. rate 3 % per annum or  $\frac{3}{4}\%$  for 3 m.St. Petersburg disc. rate =  $4\frac{1}{2}\%$  per annum, or  $1\frac{1}{8}$  for 3 m.

$$\begin{array}{rcc}
 & 37\cdot25 & 93\cdot75 \\
 + & 0\cdot28 & + 1\cdot05 \\
 \hline
 & 37\cdot53 & 94\cdot80 \\
 x = \frac{94\cdot80}{3\cdot753} = & - & - & - & - & - & - & - & \mathbf{25\cdot26}
 \end{array}$$

## VIENNA.

k. 95·20 for fr. 100 cheque

kr. 239·50 = £10 cheque

$$x = \frac{2395}{95\cdot2} = - - - - - \mathbf{25\cdot157}$$

All these calculations brought together give the following

## “ PARITY TABLE,”

which indicates immediately the most profitable remittance or return, and which will be a useful guide for purchases and sales to be effected on “change” in case of unexpected price fluctuations during market time.

	Amsterdam.	Brussels.	Berlin.	Vienna.	Paris.	St. Peters- burg.	Madrid.	Lisbon.
Amsterdam from	12·06 $\frac{1}{2}$	12·10	12·065	12·05	12·096	—	—	—
Brussels ,	25·27	25·23	25·246	—	25·263	—	—	—
Berlin ,	20·441	20·43	20·46	20·47	20·486	20·477	20·59	20·31
Vienna ,	23·92	—	23·955	23·95	24·04	—	—	—
Paris ,	25·267	25·20	25·20	25·157	25·20	25·26	25·23	25—

## SOUTH AMERICAN EXCHANGES.

Bills payable in commercial centres outside Europe appear very rarely on the London market. The international trade of countries beyond the seas is carried on mostly by bills on New York or European cities, and the sums of money for which they are drawn are nearly always expressed in the currency of the United States, or of the European countries. Their equivalent in the money of the issuing place is easy enough to find.

The London newspapers always give the latest exchange rates on London from the following South American commercial centres :—

1. Rio de Janeiro, 15½d.
2. Valparaiso, 11d.
3. Buenos Ayres, 127·27 gold premium.
4. Buenos Ayres, 21½d.
5. Buenos Ayres, 48½d.
6. Montevideo, 52d.
7. Mexico, 24 $\frac{9}{16}$ d.

Let us examine them one by one :—

(1) **Rio de Janeiro.** — The quotation means that we receive for 1 currency milreis cash, 15½ pence payable in London after 90 days' sight, i.e. after 110 days, provided the bill is shipped on the day of negotiation, as the voyage of 17 days and the 3 days' grace must be taken into account. At the Bank of England rate of 4 %, the discount of such bills would amount to 0·19d., and the relation between Brazilian currency and English money would be

$$1\,000 \text{ reis cash} = 15\cdot31 \text{d. cash.}$$

(2) **Valparaiso** bills on London are likewise quoted for 90 days' sight, and are therefore payable after 134 days— for reasons stated above. For this period a 4 % disc. would

amount to 0·16d., and the parity would therefore be  $11 - 0\cdot16$   
 $= 10\cdot84$ d. for 1 peso.

(3) (4) (5) With regard to the **Argentine currency**, we refer to page 38, where we found the value of the Argentine paper dollar (at a gold premium of 127 %) equal to 20·935d. Bills on London in Buenos Ayres are quoted for 90 days' sight, either in paper or gold dollars. As such bills are only payable after 115 days, the London discount would amount to 0·27d. in case the bill is given in exchange for paper dollars, or to 0·60d. in case the equivalent of the sterling sum is settled in gold dollars. These discounts deducted from the telegraphed prices

$$21\cdot25 - 0\cdot27 = 20\cdot98$$
d.

$$\text{and } 48\cdot50 - 0\cdot60 = 47\cdot90$$
d.

give the parity.

(6) **Montevideo** quotes the price of bills on London for 90 days' sight in pence. The London discount for 114 days at 4 % = 0·66d. deducted from the cabled price 52d. = 51·34d. shows the parity of the peso, which is above the Mint parity of 50·98 (see page 35).

(7) **Mexico** quotes London in form of cheques or bills payable after 60 or 90 days' sight. The above-stated price of  $24\frac{9}{16}$ d. cheque London is the equivalent of 1 dollar, and requires no further comment.

The following remarks on the actual state of the monetary systems of Argentina, Brazil, and Chili, will, together with the preceding comments, facilitate the better understanding of South American exchange questions.

## ARGENTINA.

The legislature created the "Conversion fund" and the "Caja de Conversion". The "fund" serves as guarantee for the redemption of the notes on the basis

of 44 gold centavos per \$; while the "Caja" (a Government department) issues and cashes notes on the same basis. Yearly contributions of the Government and the "Banco Nacional" increase the fund which already amounts to about \$30,000,000 in gold.

The stock of gold in the "Caja" consists of more than \$200,000,000, so that the circulating notes of \$575,000,000 are covered by \$230,000,000, i.e. for every dollar in paper there are 40 gold centavos in hand.

The principal banks established in Buenos Ayres possess a stock of gold equal to about £70,000,000.

The Government declared as legal tender:—

sovereigns for gold	\$5.04
20-franc pieces	„ \$4—
eagles	„ \$10.364
20-mark pieces	„ \$4.94

## BRAZIL.

The "Caixa de Conversão" is a Government institution formed on the model of the Argentine "Caja de Conversion". The "Caixa" issues and cashes notes on the basis of 16 milreis for each sovereign, i.e. 15 pence per milreis currency. The gold obtained through the exchange is invested in London, and the interest covers the expenses of the "Caixa".

Besides milreis 100,000,000 convertible notes, there circulate non-convertible notes for milreis 643,000,000. Both classes of notes have an equal paying power.

In 1907, Brazil coined silver pieces of 2, 1, and  $\frac{1}{2}$  milreis, for about milreis 10,000,000, and was thereby enabled to withdraw some notes from circulation, and to burn them.

The "Caixa" accepts in exchange for paper milreis:—

sovereigns for milreis 16—		
20-franc pieces	„	12.72
eagles	„	32.96
20-mark pieces	„	15.70

(For other remarks on Brazilian currency, see page 40.)

## CHILI.

This country plans the formation of a note conversion department similar to that of Argentina, and has already acquired for this purpose a stock of gold of £6,000,000 (pesos 80,000,000). The present note circulation (pesos 150,000,000) can only be increased by the deposit of gold equivalent to the issued notes.

(Compare the paragraph on Chilian currency, page 86.)

---

The above-mentioned countries' intentions of acquiring a large stock of gold sometimes cause profitable **gold shipments**, and we give below examples of such transactions.

### I. SHIPMENT OF SOVEREIGNS TO BUENOS AYRES.

Shipment of 10,000 sovereigns	-	-	£10,000	0	0
freight $\frac{3}{16}\%$	-	-	18	15	0
insurance $\frac{3}{4}\%$	-	-	7	10	0
sundry expenses $\frac{1}{2}\%$	-	-	5	0	0
4% interest for 22 days' voyage	-	-	24	2	0
			<b>Debit</b>	<b>£10,055</b>	<b>7</b>
					0

The "Caja de Conversion" issues for 10,000 sovereigns \$50,400, for which we receive at an exchange of 48½d. a bill on

London 90 days' sight for £10,185. As this bill travels 22 days from Buenos Ayres to London, we have to calculate a discount for  $22 + 90 + 3 = 115$  days at  $3\% = £96\ 5\ 4$  English bill stamp  $5\ 0\ 0$

,, 101 5 4

**Credit** £10,083 14 8, so that the transaction shows a profit of £28 7s. 8d., or about  $\frac{1}{4}\%$ .

At discount rates above 4 and  $3\%$  the shipment at the exchange of  $48\frac{1}{2}d.$  would not have been profitable.

## II. SOVEREIGNS TO RIO DE JANEIRO.

Shipment of 10,000 sovereigns	-	-	£10,000	0	0
freight $\frac{3}{16}\%$	-	-	18	15	0
insurance $\frac{3}{4}\%$	-	-	7	10	0
sundry expenses $\frac{1}{2}\%$	-	-	5	0	0
5% interest for 127 days	-	-	174	0	0
English bill stamp	-	-	5	0	0
			<b>Debit</b>	£10,210	5 0

For 10,000 sovereigns we receive from the Caixa **paper milreis 160,000**, and, for example, at an exchange of  $15\frac{3}{4}d.$  we can buy with it a 90 days' sight bill on London for £10,500 **Credit**. The transaction therefore shows a profit of £289 15s. or  $2\frac{7}{8}\%$ .

In the above account we have reckoned the interest for 127 days, as we fixed the voyage London-Rio and Rio-London at 17 days, and, therefore, we have  $17 + 17 + 90 + 3 = 127$  days.

### III. SHIPMENTS OF SOVEREIGNS FROM BUENOS AYRES.

At times a great demand for English currency in Buenos Ayres may reduce the exchange value of the Argentine \$, and render sovereign shipments from Buenos Ayres to London profitable. The arbitrage would then sell 90 days' sight drafts on London, and ship the sovereigns simultaneously. We may presume that bills and coins are shipped by the same steamer; the arbitrage would then have the free use of the sovereigns for 93 days, for which period the interest—say at 3 %—amounts to 0·35d. per \$.

(Par value of \$1 = 47·58d., and  $\frac{3 \times 93 \times 47·58}{36500} = 0·35d.$ )

The shipping expenses would be:—

freight  $\frac{3}{16} \%$  = 0·1875

insurance  $\frac{3}{4} \%$  = 0·075

sundry expenses  $\frac{1}{2} \%$  = 0·05

bill brokerage  $1 \%$  = 0·1

Argentine bill stamp  $\frac{1}{2} \%$  = 0·05

$0·4625 \%$  of 47·58d. = 0·22d.

The import of sovereigns from Buenos Ayres would consequently require a dollar price **below 47·71d.** (47·58 + 0·35 – 0·22).

The following example may serve as an illustration:—  
Sale of a 90 days' sight draft on London for

£10·001 5s. at 47½d. = \$50·400 = sovereigns 10·000	
less shipping expenses =	46
	<hr/>
	£ 9·954
+ 3 % interest 93 days	,, 76
	<hr/>
	£10·030

After payment of the bill of £10'001 5s., there would, therefore, remain a profit of about £29, or about  $\frac{1}{4}\%$ .

If a sovereign shipment from Buenos Ayres to London is ordered against the sale of **cable transfer London**, the price of the latter must be **below 47d.**, as the expenses and interest amount to 0·58d. per \$, which have to be deducted from the par value of the \$ (47·58d.).

### EASTERN EXCHANGES.

The majority of Eastern nations use silver—in form of coins or bars—as medium of exchange; therefore the Eastern rates of exchange must rise and fall with the price of silver.

Japan and India are exceptions; the currency of Japan is based upon gold, whilst that of India is no longer one of silver alone, since the sovereign has been given a fixed value of 15 rupees, and since the Mints have been declared closed for the coinage of silver. The “rupee” now represents 16 pence in gold, just as the 5-franc piece (silver) passes throughout the world as 5 francs in gold.

The exchange parity which governs India's foreign trade is expressed by the equation : “1 sovereign = 15 rupees,” and on that basis the India Council draws large sums on India every Wednesday in form of bills on demand and telegraphic rupee transfers, using the sterling equivalent for discharging payments in England on behalf of the Indian Empire (e.g. interest on Indian sterling loans, salaries, pensions, etc.).

The actual price of telegraphic transfers depends upon the demand for rupees.

The exchanges are cabled daily from the East in the following form :—

**Bombay and Calcutta** : telegraphic transfer 1s.  $4\frac{1}{2}$ d., expressing the equation : 1s.  $4\frac{1}{2}$ d. cash = 1 rupee cash.

**Hong-Kong** : t.t. 1s. 9d., expressing the equation : 1s. 9d.  
cash = 1 Hong-Kong dollar cash.

**Shanghai** : t.t. 2s.  $5\frac{1}{2}$ d., expressing the equation : 2s.  $5\frac{1}{2}$ d.  
cash = 1 tael currency cash.

**Yokohama** : four months' sight bills : 2s.  $0\frac{11}{16}$ d., expressing  
the equation : 2s.  $0\frac{11}{16}$ d. payable in 4 m. = 1 yen cash.

**Singapore** : t.t. 2s.  $4\frac{1}{8}$ d., expressing the equation : 2s.  $4\frac{1}{8}$ d.  
= 1 Straits Settlements dollar.

The first three quotations do not require explanation, while the Japanese price can only be brought to the parity level by deducting the London discount—at present 4%—for 161 days, for reasons already given. This discount comes to 0·42d., and the parity would be 2s.  $0\frac{11}{16} - \frac{7}{16}$  = 2s.  $0\frac{1}{4}$ d. cash for 1 yen cash.

We will now calculate exchange pars between

**India** and : (1) England, (2) Hong-Kong, (3) Shanghai,  
(4) Japan.

**Hong-Kong** and : (5) England, (6) Shanghai, (7) Japan.

**Shanghai** and : (8) England, (9) Japan.

**Japan** and : (10) England.

## I. INDIA AND ENGLAND.

A parity of exchange between the two countries can be found by silver bars—which we treated before on pages 79 and 80—gold, and  $3\frac{1}{2}$ % Rupee Government Bonds, of which further on, see p. 208.

**Gold** in India is quoted for 1 tola pure gold, therefore the equations :—

rupees  $x$  = 1 tola

1 =  $\frac{3}{8}$  oz.

1 = 84·95s. (see p. 14)

1 = 12d.

price t.t. in pence = 1 r.

$$x = \frac{382\cdot275}{\text{price t.t. in pence}}$$

At the par value of the rupee (16d.),  $x$  would be  $\frac{382.275}{16} = 23.89$ .

The gold dealt in is called "100 touch," or "24 carats" gold, and divided into three groups:—

(1) Gold assayed by the Indian Mints is the cheapest, and generally quoted at the above parity.

(2) English or Australian bar gold, which is usually  $\frac{1}{2}\%$  dearer than the preceding, and

(3) Chinese leaf, generally  $1\frac{1}{4}\%$  dearer than gold assayed by the Mints.

## 2. INDIA AND HONG-KONG.

To establish a parity between these two colonies, silver bars and gold—in form of sovereigns, or bars  $\frac{980}{1000}$  fine, or leaf (pure gold)—may be used.

### Silver Bars.

rupees  $x = \$100$

Hong-Kong price bars = 71.7 Canton taels weight

$1 = 1.208$  oz. (see p. 65)

$\frac{3}{8} = 1$  tola

$100 =$  Indian price of bars

$$x = 230.9 \times \frac{\text{Indian price silver bars}}{\text{Hong-Kong price silver bars}}$$

### Sovereigns.

$$1 \text{ rupee} = \frac{\text{Hong-Kong price sov. in \$}}{15}$$

### Gold.

rupees  $x = \$100$

Hong-Kong price pure

gold in \\$ = 1 Canton tael w.

$1 = 1.208$  oz.

$\frac{3}{8} = 1$  tola

$1 =$  Indian price

$$x = 322.1 \times \frac{\text{Indian price gold}}{\text{Hong-Kong price pure gold}}$$

Hong-Kong quotes gold in form of leaf (pure gold), and bars of a fineness of  $\frac{980}{1000}$ . We based the preceding calculation on pure gold.

### 3. INDIA AND CHINA.

As exchange mediums between the two countries can be used : silver bars and gold  $\left(\frac{980}{1000}\right)$ .

#### Silver Bars.

$$\begin{aligned}
 \text{rupees } x &= 1 \text{ tael currency} \\
 \text{price bars Shanghai in curr.} &= 100 \text{ taels Canton w.} \\
 1 &= 1.208 \text{ oz.} \\
 \frac{3}{8} &= 1 \text{ tola.} \\
 \underline{100 = \text{Indian price of bars}} \\
 x &= 3.221 \times \frac{\text{Indian price}}{\text{Shanghai price}}
 \end{aligned}$$

#### Gold.

$$\begin{aligned}
 \text{rupees } x &= 1 \text{ tael currency} \\
 \text{Shanghai price gold} &= 10 \text{ taels weight Shanghai} \\
 1 &= 1.17853 \text{ oz.} \\
 100 &= 98 \text{ oz. pure} \\
 \frac{3}{8} &= 1 \text{ tola.} \\
 \underline{1 = \text{price gold India}} \\
 x &= 30.8 \times \frac{\text{Indian price}}{\text{Shanghai price}}
 \end{aligned}$$

### 4. INDIA AND JAPAN.

$$\begin{aligned}
 \text{rupees } x &= 100 \text{ yens} \\
 1 &= \frac{3}{4} \text{ grammes pure gold} \\
 31.1 &= 1 \text{ oz.} \\
 \frac{3}{8} &= 1 \text{ tola} \\
 \underline{1 = \text{price gold India}} \\
 x &= 6.43 \times \text{Indian price gold}
 \end{aligned}$$

## 5. HONG-KONG AND ENGLAND.

## Gold.

$$\text{d. } x = \$1$$

Hong-Kong price pure gold = 1 Canton tael weight

$$1 = 1\cdot208 \text{ oz.}$$

$$1 = 84\cdot95\text{s.}$$

$$1 = 12\text{d.}$$

$$\underline{x = \frac{1231\cdot435}{\text{Hong-Kong price pure gold}}}$$

## Silver Bars.

$$\text{d. } x = \$1$$

Hong-Kong silver price = 71·7 taels Canton

$$1 = 1\cdot208 \text{ oz.}$$

$$1000 = 998 \text{ fine}$$

$$925 = 1000 \text{ standard}$$

$$1 = \text{London silver price 1 oz.}$$

$$\underline{x = 93\cdot45 \times \frac{\text{London price silver oz. standard}}{\text{Hong-Kong price silver bars}}}$$

## Mexican Dollars.

$$\text{d. } x = \$1$$

Hong-Kong price Mexican = 100 Mexican dollars

$$1 = 0\cdot8677 \text{ oz.}$$

$$1 = \text{London price of 1 oz. Mex.}$$

$$\underline{x = 86\cdot77 \times \frac{\text{London price oz. Mex.}}{\text{Hong-Kong price Mex.}}}$$

Or, taking the Mexican dollar equal to the Hong-Kong dollar, we may employ the following equations:—

$$\text{d. } x = \$1$$

$$100 = 71\cdot7 \text{ Canton taels}$$

$$1 = 1\cdot208 \text{ oz.}$$

$$1 = \text{London price Mex. oz.}$$

$$\underline{x = 0\cdot866 \times \frac{\text{London price oz.}}{\text{Mex. dollar}}}$$

## 6. HONG-KONG AND SHANGHAI.

## Gold.

$$\begin{aligned}
 \$x &= 1 \text{ tael currency} \\
 \text{price gold Shanghai} &= 10 \text{ taels gold (98 touch)} = \\
 &\quad 554.386 \text{ grains pure} \\
 580 &= \text{price Hong-Kong} \\
 \hline
 x &= 9.558 \times \frac{\text{price Hong-Kong pure gold}}{\text{price Shanghai}}
 \end{aligned}$$

## Silver Bars.

$$\begin{aligned}
 \$x &= 1 \text{ tael currency} \\
 \text{Shanghai price silver bars} &= 100 \text{ taels weight} \\
 71.7 &= (100 + \text{premium}) \text{ dollars} \\
 &\quad (\text{Hong-Kong price silver}) \\
 \hline
 x &= 1.394 \times \frac{\text{Hong-Kong price silver}}{\text{Shanghai price silver}}
 \end{aligned}$$

## Mexican Dollars.

$$\begin{aligned}
 \$x &= 1 \text{ tael curr.} \\
 \text{price Shanghai Mex.} &= 100 \text{ Mex. d.} \\
 100 &= \text{price Mex. in H.} \\
 \hline
 x &= \frac{\text{price Mex. in H.}}{\text{price Mex. S.}}
 \end{aligned}$$

## 7. HONG-KONG AND JAPAN.

## Gold.

$$\begin{aligned}
 \$x &= 100 \text{ yens} \\
 1 &= \frac{3}{4} \text{ grammes pure} \\
 31.1 &= 480 \text{ grain} \\
 580 &= 1 \text{ tael w.} \\
 1 &= \text{Hong-Kong price pure gold} \\
 \hline
 x &= 1.99578 \times \frac{\text{Hong-Kong price}}{\text{pure gold}}
 \end{aligned}$$

## 8. SHANGHAI AND ENGLAND.

## Silver Bars.

d.  $x = 1$  tael curr.

Shanghai price bars = 100 Canton t.w.

1 = 1.208 oz.

1000 = 998 fine

925 = 1000 Eng. st.

1 = London price 1 oz. stand.

$$x = 130.33 \times \frac{\text{London silver price}}{\text{Shanghai silver price}}$$

## Gold.

d.  $x = 1$  tael currency

price gold in Shanghai = 10 taels weight

1 = 1.17853 oz.

100 = 98 oz. pure

1 = 1019.4d.

$$x = \frac{11.773}{\text{price gold Shanghai}}$$

## 9. SHANGHAI AND JAPAN.

## Gold.

taels  $x = 100$  yens1 =  $\frac{3}{4}$  grammes pure gold

31.1 = 480 grains

554.386 = 1 tael weight

10 = price in curr. t.

$$x = 0.2093 \times \text{price gold Shanghai}$$

## 10. JAPAN AND ENGLAND.

(See page 32.)

In the preceding calculations no account has been taken of the expenses connected with the shipment of the precious metals, as freight, insurance, brokerages, interest on the money employed, etc.; **these expenses, varying from 1 to**

$1\frac{1}{2}\%$ , and depending upon the length of the voyage, have to be added to, or to be subtracted from, the established parity, according to the direction of the shipment.

Sometimes it pays well not to make direct remittances to an Eastern place, but to employ another Eastern commercial centre as intermediary for the settlement, and to operate with telegraphic money transfers through London.

## PARITIES BETWEEN NEW YORK AND THE EAST.

A considerable part of the international trade of the countries beyond the seas is, as already stated (p. 134), carried on by means of bills on New York, and for that reason we will calculate the pars of exchange between these countries and New York.

### I. PAR BETWEEN NEW YORK AND INDIA.

The following equations show the relation between United States and Indian money.

$$\begin{array}{ll}
 \text{rupees } x = \$1 & \text{cents } x = 1 \text{ rupee} \\
 (\text{page 22}) 4.8666 = \text{£}1 & 15 = \text{£}1 \\
 1 = 15 \text{ r.} & 1 = 486.66 \text{ cents} \\
 \hline
 x = 3.0822 & x = 32.444
 \end{array}$$

A par between New York and India can also be established by silver and gold.

#### Silver.

$$\begin{array}{l}
 \text{rupees } x = \$1 \\
 1 = 100 \text{ cents} \\
 \text{N. Y. price silver} = 1 \text{ oz. pure} \\
 \frac{3}{8} = 1 \text{ tola pure} \\
 998 = 1000 \text{ full} \\
 100 = \text{Indian price} \\
 \hline
 x = 2.672 \times \frac{\text{Indian price}}{\text{N.Y. price}}
 \end{array}$$

**Gold.**

$$\begin{aligned}
 \text{rupee } x &= \$1 \\
 800 &= 38.7 \text{ oz. pure} \\
 \frac{3}{8} &= 1 \text{ tola} \\
 1 &= \text{price gold India in rup.} \\
 \hline
 x &= 0.129 \times \text{price gold India.}
 \end{aligned}$$

**2. PAR BETWEEN NEW YORK AND HONG-KONG.****Gold.**

$$\begin{aligned}
 \text{Hong-Kong \$}x &= \$1 \text{ U.S.} \\
 800 &= 38.7 \text{ oz. pure } \left( 43 \text{ oz. } \frac{900}{1000} \right) \\
 1.208 &= 1 \text{ Canton tael wt. pure gold} \\
 1 &= \text{H. \$ price} \\
 \hline
 x &= 0.04 \times \text{Hong-Kong price pure} \\
 &\quad \text{gold}
 \end{aligned}$$

**Silver.**

$$\begin{aligned}
 \text{Hong-Kong \$}x &= \$1 \text{ U.S. (100 cents)} \\
 \text{New Y. silver price in cents} &= 1 \text{ oz. pure silver} \\
 998 &= 1000 \text{ full} \\
 1.208 \text{ oz.} &= 1 \text{ tael weight} \\
 71.7 &= \text{Hong-Kong price of silver in \$} \\
 \hline
 x &= 1.157 \times \frac{\text{Hong-Kong price silver}}{\text{New York price silver}}
 \end{aligned}$$

**3. PAR BETWEEN NEW YORK AND SHANGHAI.****Gold.**

$$\begin{aligned}
 \$x &= 1 \text{ tael currency} \\
 \text{price gold in Shanghai} &= 10 \text{ taels weight} \\
 1 &= 1.17853 \text{ oz.} \\
 100 &= 98 \text{ oz. fine} \\
 38.7 &= \$800 \\
 \hline
 x &= \frac{238.75}{\text{price gold in Shanghai}}
 \end{aligned}$$

**Silver.**

$$\begin{aligned}
 \text{cents} - x &= 1 \text{ tael currency} \\
 \text{price bars Shanghai} &= 100 \text{ Canton taels weight} \\
 1 &= 1.208 \text{ oz.} \\
 1000 &= 998 \text{ fine} \\
 1 &= \text{N. Y. price silver in cents} \\
 \hline
 x &= 120.56 \times \frac{\text{New Y. silver price}}{\text{Shanghai price bars}}
 \end{aligned}$$

**4. PAR BETWEEN NEW YORK AND JAPAN.**

$$\begin{aligned}
 \text{yen } x &= \$1 & \$x &= 1 \text{ yen} \\
 800 &= 38.7 \text{ oz. fine} & 1 &= 0.75 \text{ grammes pure} \\
 &&&\text{gold} \\
 1 &= 31.1 \text{ grammes} & 31.1 &= 1 \text{ oz. pure gold} \\
 0.75 &= 1 \text{ yen} & 38.7 &= \$800 \\
 \hline
 x &= 2.006 & x &= 0.49851
 \end{aligned}$$

In order to enable the reader to work out by himself parities of exchanges, we print below copies of some Asiatic exchange lists:—

**SHANGHAI.****BANK'S SELLING RATES.**

T.T. on London	-	-	-	-	2s. 3 $\frac{7}{8}$ d.
D/Drafts	-	-	-	-	2s. 3 $\frac{5}{6}$ d.
4 m./s.	-	-	-	-	2s. 4 $\frac{1}{8}$ d.
T.T. on India	-	-	-	-	174 $\frac{1}{2}$
,, France	-	-	-	-	292
,, Germany	-	-	-	-	237
,, New York	-	-	-	-	56 $\frac{1}{2}$
,, Japan	-	-	-	-	88 $\frac{1}{4}$
,, Hong-Kong	-	-	-	-	75 $\frac{1}{2}$
,, Batavia	-	-	-	-	139 $\frac{3}{4}$

## BANK'S BUYING RATES.

4 m.s. bills on London credits	-	-	2s. 4 $\frac{3}{8}$ d.
6 ,,, credits	-	-	2s. 4 $\frac{9}{16}$ d.
4 ,,, credits D.P.	-	-	2s. 4 $\frac{1}{2}$ d.
6 ,,, credits	-	-	2s. 4 $\frac{11}{16}$ d.
4 ,,, bills on France	-	-	297 $\frac{1}{2}$
4 ,,, " Germany	-	-	242
4 ,,, " New York	-	-	58 $\frac{7}{8}$
30 days' sight ,,, Japan	-	-	87 $\frac{1}{4}$

## BULLION.

Gold bars (weight taels 10 (Chauping)), 98 touch	£419.80
Silver bars (weight taels 100 (Canton)), 998 touch	£111.20
Mexican dollars per \$100	-
Bar silver in London	-

## HONG-KONG.

## ON LONDON.

T.T. - - - - -	-	-	1s. 8 $\frac{1}{16}$ d.
Demand Bank Bills	-	-	1s. 9d.
30 days' sight B.B.	-	-	1s. 9 $\frac{1}{16}$ d.
60 ,,, ,,"	-	-	1s. 9 $\frac{1}{8}$ d.
4 months' sight B.B.	-	-	1s. 9 $\frac{1}{4}$ d.
4 ,,, Credit to Banks	-	-	1s. 9 $\frac{5}{16}$ d.
6 ,,, ,,"	-	-	1s. 9 $\frac{7}{16}$ d.
4 ,,, ,," documents	-	-	1s. 9 $\frac{7}{16}$ d.
6 months' sight	-	-	1s. 9 $\frac{9}{16}$ d.

## ON FRANCE.

T.T. - - - - -	-	-	fr. 2.19
Demand Bank Bills	-	-	,, 2.19 $\frac{1}{2}$
3 months' sight private	-	-	,, 2.23
4 ,,, ,,"	-	-	,, 2.23 $\frac{1}{2}$
6 ,,, ,,"	-	-	,, 2.25 $\frac{1}{2}$

## ON GERMANY.

T.T. - - - - -	- - - - -	rm. 178
Demand Bank Bills -	- - - - -	178½
4 months' sight private -	- - - - -	182
6        "        "	- - - - -	nom.

## ON NEW YORK AND ON SAN FRANCISCO.

T.T. \$100 Hong-Kong currency	-	\$42 $\frac{3}{8}$ gold
Demand Bank Bills -	- - - - -	,, 42 $\frac{1}{2}$ ,,
30 days' sight private -	- - - - -	,, 43 $\frac{1}{4}$ ,,
60        "        "	- - - - -	,, 43 $\frac{5}{8}$ ,,
4 months sight ,,	- - - - -	,, 44 $\frac{3}{8}$ ,,
6        "        "	- - - - -	,, 44 $\frac{7}{8}$ ,,

## ON INDIA.

T.T. - - - - -	-	Rs. 131 $\frac{3}{4}$ per \$100
Demand Bank Bills -	- - - - -	132        ,,
3-7 days' sight private -	- - - - -	133        ,,

## ON SHANGHAI.

T.T. - - - - -	- - - - -	74 $\frac{3}{4}$
Demand - - - - -	- - - - -	74 $\frac{3}{4}$
30 days' sight private -	- - - - -	75 $\frac{3}{4}$

## ON SINGAPORE.

Demand Bank Bills	-	Straits \$74 $\frac{3}{8}$ per \$100
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## ON SYDNEY OR MELBOURNE.

Demand Bank Bills	- - - - -	1s. 9d. per \$
30 days' sight private	1s. 9 $\frac{9}{16}$ d.	{ on New Zealand or
60        "        "	1s. 9 $\frac{11}{16}$ d.	{ outports $\frac{1}{2}$ d. more.

## ON JAPAN.

Demand Bank Bills	- - - - -	85 per \$100
30 days' sight private	- - - - -	86        ,,

## ON MANILA.

Demand Bank Bills	-	-	-	86
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## ON SAIGON.

Demand Bank Bills	-	-	-	$8\frac{1}{2}\%$ prem.
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## ON BANGKOK.

Demand Bank Bills	-	-	-	$87\frac{1}{4}$
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## ON HAIPHONG.

Demand Bank Bills	-	-	$9\frac{1}{4}\%$	prem. nominal
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## ON AMOY.

Demand Bank Bills	-	-	-	$1\%$ discount
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## ON BATAVIA.

T.T. guilders	-	-	-	-	$104\frac{7}{8}$ per \$100
30 days' sight private	-	-	-	-	$106\frac{5}{8}$

## BULLION.

Gold leaf 100 touch	-	-	-	\$59.70 per tael
Gold leaf 995 touch	-	-	-	59.30 ,,
Gold leaf common	-	-	-	58.90 ,,
Gold bars 98 touch	-	-	-	57.70 ,,
Double Eagle	-	-	-	46.90 each
Sovereigns (buying rate)	-	-	-	11.46 ,,
Philippine \$4 gold piece	-	-	-	9.05 ,,
Spanish \$5	-	-	-	11.05 ,,
Bar silver (American)	-	-	-	$5\frac{7}{8}\%$
Clean Mexican dollar, old die	-	-	-	$1\%$ discount
New die	-	-	-	nominal
Foochow dollars	-	-	-	$3\%$ discount
Bar silver in London	-	-	-	$23\frac{11}{16}$

## SINGAPORE.

	Bank on demand.	Bank 4 m.s.	30 d.s.	Private 3 m.s.	6 m.s.
London	2s. 4 $\frac{3}{16}$ d.	2s. 4 $\frac{11}{16}$ d.	2s. 4 $\frac{5}{16}$	2s. 4 $\frac{9}{16}$	2s. 4 $\frac{15}{16}$ d.
Paris	- 295	—	—	—	—
Batavia	- 140	—	141 $\frac{1}{2}$	—	—
Hamburg	- 240	—	—	—	—
Bombay-					
Calcutta	- 176	—	177 $\frac{1}{2}$	—	—
Rangoon	- 175 $\frac{3}{4}$	—	—	—	—
Manila	- 115	—	116 $\frac{1}{4}$	—	—
Hong-Kong	- 24 $\frac{5}{8}$ %	—	25 $\frac{3}{4}$ %	—	—
Shanghai	- 100	—	101 $\frac{1}{4}$	—	—
Melbourne-					
Sydney	- 2s. 4 $\frac{3}{16}$ d.	—	2s. 4 $\frac{5}{8}$ d.	—	—

## YOKOHAMA.

## LONDON.

Bank T.T.	-	-	-	-	2s. 0 $\frac{9}{16}$ d.
Bank demand	-	-	-	-	2s. 0 $\frac{5}{8}$ d.
Bank 4 months' sight	-	-	-	-	2s. 0 $\frac{7}{8}$ d.
Credit 4 months' ,,	-	-	-	-	2s. 0 $\frac{15}{16}$ d.
Credit 6 months' ,,	-	-	-	-	2s. 1 $\frac{1}{16}$ d.

## FRANCE.

Bank T.T.	-	-	-	-	2.57
Bank demand	-	-	-	-	2.57 $\frac{1}{2}$
Private 4 m.s.	-	-	-	-	2.62

## SWITZERLAND.

Private 4 months' sight	-	-	-	2.62 $\frac{1}{2}$
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## GERMANY.

Bank T.T.	-	-	-	-	-	2·08
Bank demand	-	-	-	-	-	2·08½
Private 30 days	-	-	-	-	-	2·11
Private 4 months' sight	-	-	-	-	-	2·12½-2·13

## SAN FRANCISCO AND NEW YORK.

Bank T.T.	-	-	-	-	-	49½-49 <sup>5</sup> <sub>8</sub>
Bank demand	-	-	-	-	-	50
Bank 30 days	-	-	-	-	-	50 <sup>1</sup> <sub>4</sub>
Bank 4 months	-	-	-	-	-	51

## AUSTRALIA.

Private 30 days' sight	-	-	-	-	-	2s. 1 <sup>3</sup> <sub>10</sub> d.
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## SHANGHAI.

Bank T.T.	-	-	-	-	-	87 nominal
Private 10 days' sight	-	-	-	-	-	88½ nominal

## HONG-KONG.

Bank T.T.	-	-	-	-	-	86 nominal
Private 10 days' sight	-	-	-	-	-	84 nominal

## INDIA.

Bank T.T.	-	-	-	-	-	153½-153½
Private 30 days' sight	-	-	-	-	-	155½

## COUPONS.

All due coupons can be considered as cheques on the place at which they are payable, their value can be found accordingly, and they, therefore, do not require any comment.

We will only make an exception of the **coupons** of the **Russian loans**, and deal with them separately, as they sometimes allow of profitable arbitrage operations. These coupons can be tendered for payment of duty in Russia 6 months before they become due and until 10 years after their maturity, hence their name, "**Zollcoupons**". They are daily dealt in on the Berlin bourse, and quoted for 100 old roubles.

As the 4% Russian bonds, from which these coupons are detached **quarterly**, are represented by bonds of a nominal value of :—

125 old roubles—m. 404—fr. 500—£19 15s. 6d.—fl. 239—\$96·25, the coupons are paid with :—

1·25 old rouble (=1·875 new rouble) = m. 4·04 = fr. 5 (in Brussels and Paris) = 3·955s. = 96½ cents.

We have therefore the equation :—

$$\text{old rouble } 1\cdot25 = \text{m. } 4\cdot04$$

$$\text{old rouble } 100 = \text{m. } 323\cdot20,$$

which is the parity price. When the Berlin quotations show a sufficient margin against the coupon value in Paris, Brussels, Amsterdam, St. Petersburg, or New York, then the arbitrage may operate, as for instance :—

The coupon is paid in Russia with roubles 1·875, therefore the equation :—

$$\text{roubles } 1\cdot875 = \text{m. } 4\cdot04$$

$$\text{or roubles } 100 = \text{m. } 215\cdot45$$

If cheque St. Petersburg is quoted in Berlin above 216, and Zollcoupons can be bought at, or below, the parity price 323·20, then it would pay to sell cheque St. Petersburg, and to cover the same with "Zollcoupons".

Of course, the expenses connected with such a transaction (such as brokerage, insurance, commission, postage, loss of interest) have to be taken into account.

• In Brussels and Paris the coupons are paid with fr. 5, therefore the equation :—

$$\text{fr. } 5 = \text{m. } 4\cdot04, \text{ or}$$

$$\text{fr. } 100 = \text{m. } 80\cdot80, \text{ or with } 1\frac{1}{2}\% \text{ expenses}$$

= **m. 80.92.** If cheque on Paris or Brussels should quote higher than 80.92, then it would be profitable to sell such a cheque, and to cover it with a purchase of "Zollcoupons".

In New York the coupons are paid with \$0.9625, therefore the equation :—

$$\$96\cdot25 = \text{m. } 404$$

$$\text{or } \$1 = \text{m. } 4\cdot1974$$

Should the price of cheque New York and the price of Zollcoupons show a margin against this parity, then the arbitrage may proceed.

As all coupons cashed in England are subject to income tax, Russian Zollcoupons are never presented for payment in London.

The foreigner is exempt from the payment of that tax if he can prove that he possesses the bonds from which the coupons in question were detached. But in the case of "Zollcoupons," the foreigner cannot make such a declaration.

The brokerage for coupons is usually  $\frac{1}{2}\%$ .

## NOTE-ISSUING BANKS AND THEIR RETURNS.

Every arbitrage in bills is based on the money rate of the place where the bill is payable. That rate depends upon a great many factors, and the principal duty of the note-issuing banks is to supervise and to influence the money market. A study of the weekly returns of the

most important note-issuing banks will help the arbitrageur to form a proper judgment of the course of foreign exchanges.

In the following pages we give a short résumé of the various bank returns, showing the nature of the fiduciary moneys at a glance.

Every European note-issuing bank has established branches or agencies, and **bills payable at a place with such a branch or agency may be discounted at the head office at the fixed discount rate, without any further charge, and money may be transferred from one office to another.**

#### THE BANK OF ENGLAND,

established in 1694 with the comparatively small capital of £1,200,000, according to the scheme of William Patterson, has been reorganised several times. The advances of money the Bank made to the English Government on various occasions, amounting to £11,015,100, are still in abeyance, but in consideration of them certain privileges were granted to the Bank. There are still 71 banks in the United Kingdom (the most important of which are in Ireland) which have the right to issue notes for a total of £10,500,000; their number is, however, steadily decreasing.

From 1797-1821, during the time of the "bank restrictions," the Bank was unable to pay its notes in gold, which consequently stood at a premium, sometimes as high as 30 %.

In 1816 the Bank capital was increased to its present amount of £14,553,000, and in 1844 Parliament passed a new Act, drawn up by Sir Robert Peel, which has regulated the business of the Bank ever since. According to it the Bank was divided into two separate departments,

one for issue of notes, and the other for ordinary banking business. The issuing department can issue any amount of notes, provided there is the deposit of their gold equivalent. Beyond that equivalent it can at present only issue non-covered notes for £18,450,000 (in 1844 the limit was £14,000,000), but in the critical years 1847, 1857, and 1866 the Bank was obliged, in order to help commerce, to exceed the fixed amount. The banking department receives all the issued notes, and the unemployed notes, together with the gold and silver coins in hand, appear as "**reserve**" in the weekly Bank return, published every Thursday; and the proportion of reserve to liability (deposits) is a guiding item for a return under examination, and, at times, of the greatest influence on the tendency of the London Stock Exchange.

The Bank of England is the banker to the Government, receiving for the account-keeping a yearly sum of £198,000, but the Bank pays to the Treasury an annual stamp duty of £180,000.

The Government has no vote in the election of the governing body of the Bank, which is entirely left to its shareholders, while in other countries similar elections depend on the Ministry.

The Bank has only eleven branches (as it does not seek to increase its ordinary banking business), two in London, Burlington Gardens, W., and Temple Bar, W.C., and nine in the country: Birmingham, Bristol, Hull, Leeds, Liverpool, Manchester, Newcastle-on-Tyne, Plymouth, Portsmouth.

We print below a weekly return of the Bank of England, remarking that the item "**rest**" means the undivided profit.

## ISSUE DEPARTMENT.

Notes issued	£50,342,000	Government debt	£11,015,000
		Other securities	7,435,000
		Gold coin and bullion	31,892,000
	<u>£50,342,000</u>		<u>£50,342,000</u>

## BANKING DEPARTMENT.

Proprietors' capital	£14,553,000	Government securities	£15,160,000
Rest	3,186,000	Other securities	24,702,000
Deposits	46,362,000	Notes	22,408,000
Seven-day and other bills	84,000	Gold and silver coins	1,915,000
	<u>£64,185,000</u>		<u>£64,185,000</u>

We see from this return that notes for over £50,000,000 were issued, of which there were in the possession of the banking department over 22,000,000 Therefore, there were in circulation notes for £28,000,000 which were based on gold of a value of nearly 32,000,000 i.e. for every £5 note there was more than £5 gold in stock. The proportion of reserve to liability in this return was 52.36% (£24,323,000 to £46,446,000).

## THE BANQUE DE FRANCE

(PARIS),

the only note-issuing Bank in France, was founded by Napoleon I in 1800, and has, considering its enormous stock in gold and silver, a very moderate capital, viz. £7,300,000 (when we take £1 = fr. 25).

Its privilege of issuing notes expires on 31 December, 1920, but can be cancelled on 31 December, 1912, by Act of Parliament to be passed in the year 1911.

One-third of the issued notes must be covered by gold and silver, without fixing a proportion between the two metals, the rest of the notes must be covered by French Rentes and Bills of Exchange with at least three signatures.

In the year 1848, and during the period of 1870-1877, the Bank was unable to pay its notes in metal.

The Government appoints the Governor and the two Deputy Governors.

According to the weekly bank returns the Banque de France has a

Note circulation of about £200,000,000

(nearly seven times as large as the note circulation of the Bank of England) covered by

£144,000,000 gold

and £36,000,000 silver

which corresponds to a metallic cover of fr. 90 for each note of fr. 100, of which fr. 72 are in gold and fr. 18 in silver. The "Chambre de Compensation de Paris" (a syndicate of eleven of the most important Paris banking firms) was formed in 1872, after the model of the London Clearing House.

The Banque de France acts as banker to the French Government.

The Bank has branches at the following places:—

Agen, Aix, Ajaccio, Alais, Albi, Alençon, Amiens, Angers, Angoulême, Annecy, Annonay, Arras, Aubusson, Auch, Aurillac, Autun, Auxerre, Avignon.

Bar-le-Duc, Bastia, Bayonne, Beaune, Beauvais, Belfort, Bergerac, Besançon, Beziers, Blois, Bordeaux, Boulogne-sur-Mer, Boulogne-sur-Seine, Bourg, Bourges, Brest, Brive.

Caen, Cahors, Calais-Saint-Pierre, Cambrai, Cannes, Carcassonne, Castres, Cette, Chalon-sur-Saône, Chalons-sur-Marne, Chambéry, Charenton, Chartres, Chateauroux, Châtellerault, Chaumont, Cherbourg, Cholet, Clermont-Ferrand, Cognac, Compiègne, Cusset.

Dax, Digne, Dijon, Dole, Douai, Dragnignan, Dunkerque.

Elbeuf-Caudebeck, Epernay, Epinal, Evreux.

Fécamp, Flers, Foix, Fougères, Fourmies.

Gap, Granville, Grasse, Gray, Grenoble, Guéret.

Le Havre, Honfleur, Laon, Laval, Levallois-Perret, Libourne, Lille, Limoges, Lisieux, Lons-le-Saunier, Lorient, Lunéville, Lyon.

Macon, Le Mans, Marseille, Maubeuge, Mazamet, Meaux, Melun, Mende, Mezières-Charleville, Milan, Montargis, Montauban, Mont-de-Marsan, Montélimar, Montluçon, Montpellier, Montronge, Morlaix, Moulins.

Nancy, Nantes, Narbonne, Neuilly-sur-Seine, Nevers, Nice, Nîmes, Niort.

Orléans.

Pantin, Pau, Périgueux, Perpignan, Poitiers, Pontarlier, Pont-Audemer, Privas, Le Puy.

Quimper.

Reims, Rennes, Roanne, Rochefort-sur-Mer, La Rochelle, La Roche-sur-Yon, Rodez, Romans, Roubaix, Rouen.

Saint-Brieuc, Saint-Claude, Saint-Denis, Saint-Dié, Saint-Etienne, Saint-Junien, Saint-Lô, Saint-Malo, Saint-Servan, Saint-Nazaire, Saint-Omer, Saint-Quentin, Saintes, Salon, Saumur, Sedan, Sens.

Tarbes, Thiers, Thonon, Toulon, Toulouse, Tourcoing, Tours, Troyes, Tulle.

Valence, Valenciennes, Vannes, Verdun, Versailles, Vesoul, Vichy, Vienne, Vierzon, Vincennes, Voiron.

### THE REICHSBANK

(BERLIN)

was established in 1875, in succession to the Prussian Bank, as a public company with a share capital of £6,000,000, which has since been increased to £9,000,000 (taking £1 = m. 20).

The German Government participates in its profits, and its clerks are considered Government clerks.

The issue of any amount of notes is legal, provided their equivalent in gold is deposited. One-third of the issued notes must be redeemable at any moment, but the uncovered quantity of notes is limited to £23,641,450, and can be increased under payment of a Government tax of 5 % p. a. of the excess.

The metallic cover deposited **at present** for the issue of notes amounts to

£57,100,000 in round figures, the Bank can therefore issue notes for

£23,641,450 more, that is for

£80,741,450 which against the actual note circulation of £76,000,000 shows a non-issued amount of

£4,741,450 within the legal limit.

Before the creation of the Reichsbank several German banks had the right to issue notes for a limited time, but their number—at present four—is constantly decreasing by expiration of the privileges.

Against the “Kriegsschatz” (war fund) deposited in Spandau near Berlin, and consisting of £6,000,000 gold coins, the German Government issued £6,000,000 notes (in form of 5, 20 and 50 marks) which circulate under the name of “Reichs Kassenscheine” (Empire counter notes), and which are convertible at any moment at the Reichsbank.

Branches of the Reichsbank are established in the following towns:—

Aachen, Alfeld, Allenburg, Allenstein, Alsfeld, Altena, Altenburg, Altona, Anclam, Andernach, Apenrade, Apolda, Arnswalde, Aschaffenburg, Aschersleben, Aue, Auerbach-i.-Voigtl, Augsburg.

Backnang, Bamberg, Barmen, Bartenstein, Barth, Bautzen, Bayreuth, Belgard, Bernburg, Beuthen, Biebrich,

Bielefeld, Bingen, Bischofsburg, Bocholt, Bochum, Bonn, Brandenburg, Braunsberg, Braunschweig, Bremen, Breslau, Brieg, Bromberg, Bruchsal, Buchholz, Bünde, Bunzlau, Bütow.

Cassel, Celle, Charlottenburg, Chemnitz, Coblenz, Coburg, Cöln, Cörlin, Cöslin, Cöthen, Colmar, Cottbus, Crimmitschau, Culm, Culmsee, Cüstrin.

Danzig, Darmstadt, Demmin, Dessau, Deutsch-Eylau, Deutsch-Krone, Dillenburg, Dirschau, Döbeln, Dortmund, Dresden, Düren, Dusseldorf, Duisburg.

Eberswalde, Eckernförde, Einbeck, Eisenach, Elberfeld, Elbing, Elmshorn, Emden, Erfurt, Eschwege, Eschweiler, Essen, Esslingen, Eupen, Euskirchen.

Finsterwalde, Flensburg, Forst, Frankenthal, Frankfurt-a.-M., Frankfurt-a.d.-O., Freiberg, Freiburg-i.-Breisgau, Friedberg, Fulda, Fürstenwalde, Fürth.

Geestemünde, Gelnhausen, Gelsenkirchen, Gera, Gerdauen, Gevelsberg, Giessen, M. Gladbach, Glatz, Glauchau, Gleiwitz, Glogau, Schwäb. Gmünd, Gnesen, Goch, Göppingen, Görlitz, Göttingen, Goldap, Gotha, Grätz, Graudenz, Greifswald, Greiz, Grossenhain, Grünberg, Guben, Gütersloh, Gumbinnen, Gummersbach.

Hadersleben, Hagen, Halberstadt, Halle-a.d.-S., Hamburg, Hameln, Hamm, Hanau, Hannover, Harburg, Hattingen, Heide, Heidelberg, Heidenheim, Heilbronn, Helmstedt, Herford, Herne, Hersfeld, Hilden, Hildesheim, Hirschberg-i.-Schl., Hof.-i.-B., Hohenlimburg, Höhr, Holzminden, Husum.

Inowrazlaw, Insterburg, Iserlohn, Itzehoe.

Jena.

Kaiserslautern, Karlsruhe, Kattowitz, Kaufbeuren, Kempten, Kiel, Kirchen, Kitzingen, Kolberg, Königsberg-i.-Pr., Königshütte, Konitz, Konstanz, Kosten, Krefeld, Kreuzburg, Kreuznach, Krotoschin, Kulmbach.

Lahr, Landau, Landeshut-i.-Schl., Landsberg-a. d.-W., Landshut (Bayern), Langenberg, Lauban, Lauenburg, Lauterbach (Oberhessen), Leer, Leipzig, Leisnig, Lennep, Liegnitz, Limburg-a.d.-Lahn, Lindau, Linden v. Hann, Lippstadt, Lissa, Lohr, Lörrach, Luckenwalde, Ludwigshafen, Lübeck, Lüdenscheid, Lüneburg, Lyck.

Magdeburg, Mainz, Mannheim, Marburg, Marienburg, Marienwerder, Markneukirchen, Markt-Redwitz, Meerane, Meiderich, Meiningen, Meissen, Memel, Memmingen, Meseritz, Metz, Minden, Mitweida, Mühlhausen-i.-Thür., Mülhausen-i.-Elsass, Mülheim (Rhein), Mülheim-a.d.-Ruhr, München, Münster-i.-W., Muskau.

Naumburg - a.d. - S., Neisse, Neubrandenburg, Neu-münster, Neunkirchen, Neuruppin, Neuss, Neustadt-a.d.-Haardt, Neustettin, Neuwied (Heddesdorf), Norden, Nordhausen, Nördlingen, Nürnberg.

Oberhausen, Oberlahnstein, Oelsnitz, Offenbach, Offenburg, Ohligs, Olpe, Oppeln, Oschatz, Osnabrück, Osterode-am-Harz, Osterode-in-Ostpreussen, Ostrowo.

Paderborn, Passau, Peine, Pforzheim, Pillkallen, Pirmasens, Pirna, Plauen, Pleschen, Pössneck, Posen, Potsdam, Prenzlau.

Quedlinburg.

Rastenburg, Ratibor, Ratingen, Ravensburg, Rawitsch, Recklinghausen, Regensburg, Reichenbach-i.-Schl., Reich-enbach-i.-Voigtl., Remscheid, Rendsburg, Reutlingen, Rheydt, Riesa, Rosenheim, Rostock, Rottweil, Rüdesheim, Ruhrort.

Saarbrücken, Säckingen, Sagan, Sangerhausen, Schleswig, Schneidemühl, Schwedt, Schweidnitz, Schweinfurt, Schwelm, Schwiebus, Siegen, Soest, Solingen, Sommerfeld, Sonderburg, Sonneberg, Sorau, Speyer, Spremberg, Stallupönen, Stargard-i.-Pomm., Pr. Stargard, Stettin, Stolberg, Stolh, Stralsund, Strassburg-i.-Elsass, Striegau, Stuttgart, Suhl.

Thorn, Tilsit, Tondern, Traben, Triberg, Trier, Tuttlingen.

Uerdingen, Ulm (Neu Ulm), Unna.

Velbert, Viersen, Villingen.

Waldenburg-i.-Schl., Waldheim, Waldkirch, Wehlen, Weimar, Weinheim, Weissenfels, Werdau, Werden, Wermelskirchen, Wesel, Wetzlar, Wiesbaden, Wilhelms-haven, Witten, Wittenberge, Wongrowitz, Worms, Würzburg, Wurzen.

Zabern, Zeitz, Zittau, Zweibrücken, Zwickau.

### OESTERREICHISCH-UNGARISCHE BANK

(VIENNA).

(AUSTRO-HUNGARIAN BANK.)

The "Oesterreichische Nationalbank," established in 1816 as a public company, changed its name into the above in 1878 in consequence of the division of the Monarchy into Austria and Hungary. Its capital is £8,750,000 (£1 taken as kronen 24).

The last return shows a stock of

gold of £58,000,000 (in round figures)	
and of silver of £12,000,000	„ „ „

£70,000,000

against a note circulation of £86,000,000.

A metallic cover of 81 kronen (67 in gold and 14 in silver) is therefore provided for each note of 100 kronen.

The Government participates in the profits of the Bank, and appoints its Governor and Deputy-Governor.

The Bank is authorized to issue £16,666,666 notes **above** the metallic cover **tax free**, and any note-issue above the limit pays a Government tax of 5 %. p. a.

Branches of the Oesterreichisch-Ungarische Bank are in the following towns:—

Agram, Alt Becse, Arad, Asch, Aussig.

Baja, Balassa-Gyarmat, Békés-Csaba, Beregszasz, Bielitz, Biala, Bistritz, Bjelovar, Böhmischt-Leipa, Bozen, Brasso, Bregenz, Brody, Brünn, Brüx, Buczacz, Budapest, Budweis.

Chrudim, Cilli, Csakathurn, Czegléd, Czernowitz.

Debreczin, Dés, Detta, Deutsch-Bogsán, Drohobicz, Dukla, Dunaföldvár.

Eger, Eperies, Erlau, Essegg.

Feldkirch, Fiume, Fogaras, Friedek, Fünfkirchen.

Gablonz, Görz, Gorlice, Gran, Graslitz, Graz, Grosz-Becskerek, Grosz-Kanizsa, Grosz-Kikinda, Gr.-Szt.-Miklós, Grosswardein, Gyergyó-Szent-Miklós, Gyöngyös.

Hatzfeld, Hermannstadt, Hódmezö, Vásárhely, Hohenelbe, Hohenmauth.

Iglau, Iglo, Innsbruck.

Jägerndorf, Jaroslau, Jaslo, Jászberény, Jičin, Jungbunzlau.

Kalocsa, Kaposvár, Karánsebes, Karlsbad, Karlstadt, Kaschau, Kecskemét, Keszthely, Kézdi-Vásárhely, Kis-Czell, Kis-várda, Klagenfurt, Klattau, Klausenburg, Königgrätz, Königinhof, Kolin, Kolomea, Komorn, Komotau, Krakau, Krems, Kremsier, Krizevci, Kronstadt.

Laibach, Laun, Leitmeritz, Lemberg, Linz, Lippa, Liptó-Szt.-Miklós, Losoncz, Lugos.

Mähr-Ostrau, Mähr-Schönberg, Makó, Marburg, Marmaros-Sziget, Maros-Vásárhely, Medgyes, Meran, Mezötur, Miskolcz, Mitrovitz, Mohacz, Munkács.

Nagy-Enyed, Nagy-Károly, Nagyszalonta, Neubidschow, Neuhäusel, Neunkirchen, Neu-Sandec, Neusatz, Neusohl, Neutitschein, Neutra, Nikolsburg, Nyiregyháza.

Oedenburg, Olmütz, Oravicza, Oroshaza, Orsova.

Pancsova, Pápa, Pardubitz, Pettau, Pilsen, Pisek, Prag, Prerau, Pressburg, Prossnitz, Przemysl.

Raab, Radna, Raudnitz, Reichenberg, Rimaszombat, Riva, Rosenau, Roveredo, Rumburg, Rzeszów.

Saaz, Salzburg, Sanok, Satoraljaujhely, Schässburg, Sehan, Schluckenau, Schönlinde, Semlin, Siófok, Sissek, Spalato, Stanislau, Starkenbach, Steinamanger, Strakonitz, Stryj, Stuhlweissenburg, Suczawa, Szabadka, Szász-Regen, Szatmár, Szegedin, Szegszárd, Szentes, Szilágy-Somlyó, Szolnok.

Tabor, Tapolcza, Tarnopol, Tarnów, Taus, Temesvár, Teplitz, Teschen, Tetschen-Bodenbach, Torda, Tirök-Becse, Trautenau, Trebitsch, Trencsin, Trient, Triest, Troppau, Turoczsentmarton, Tyrnau.

Ung.-Altenburg, Ung.-Hradisch, Ung.-Weisskirchen, Ungvár.

Veszprim, Villach, Vinkovec, Vukovar.

Warasdin, Warnsdorf, Werschetz, Wiener-Neustadt, Wieselburg, Wolin.

Zala-Egerzeg, Zara, Zenta, Znaim, Zombor, Zwittau.

#### ITALIAN NOTE-ISSUING BANKS.

In Italy there are three note-issuing Banks: The Banca d'Italia (Rome), the Banco di Napoli, and the Banco di Sicilia.

The most important of these three banks, the Banca d'Italia, was formed by the amalgamation of the following three banks: Banca Nazionale Nel Regno d'Italia, Banca Nazionale Toscana, and Banca Tosana di Credito. Its capital is £12,000,000.

The metallic cover of the issued notes can be twofold.

There must be 40 % **metallic cover** for:—

£25,200,000 notes of the Banca d'Italia.

7,600,000	„	Banco di Napoli.
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1,760,000	„	Banco di Sicilia.
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**Every note issued above** those limits must be **fully covered** by deposit of the equivalent metal.

At present notes circulate of the Banca d'Italia for £57,000,000, and as the Bank is allowed a circulation of—

£25,200,000 with 40 % cover, it follows

that £31,800,000 notes must be covered by metal of the **same** amount.

Therefore, the Bank must possess £31,800,000 gold

+ 40 % of £25,200,000 = 10,080,000 ,,

£41,880,000 ,,

while its stock of gold actually amounts to £45,000,000, i.e. exceeds by £3,000,000 the legal limit.

Besides the above-mentioned notes there are **Government notes** for £32,000,000 in circulation, which are covered only by the deposit of £16,000,000 metal.

The note-issuing Banks have accepted £8,000,000 of these Government notes, and are allowed to treat them in the accounts as metal.

The Banca d'Italia with its head office at Rome, has established branches in the following cities:—

Alessandria, Ancona, Aquila, Arezzo, Ascoli Piceno, Asti, Avellino.

Bari, Barletta, Belluno, Benevento, Bergamo, Bologna, Brescia.

Cagliari, Caltanissetta, Campobasso, Carrara, Caserta, Castellamare, Catania, Catanzaro, Chieti, Como, Cosenza, Cremona, Cuneo.

Ferrara, Foggia, Forli.

Girgenti, Grosseto.

Lecce, Lodi, Lucca.

Macerata, Mantova, Massa, Messina, Modena, Montelone-Calabro.

Novara.

Padova, Parma, Pavia, Perugia, Pesaro, Piacenza, Pisa, Pistoia, Porto Maurizio, Potenza, Prato (Tuscany).

Ravenna, Reggio-Calabria, Reggio Emilia, Rovigo.

Salerno, Sassari, Savona, Siena, Syracuse, Sondrio, Sora, Spezia.

Taranto, Teramo, Terni, Trapani, Treviso.

Udine.

Vercelli, Verona, Vicenza, Vigevano.

### BANQUE DE L'ÉTAT

(ST. PETERSBURG).

This Bank was established in 1860 by the Russian Government, who provided the capital of £5,000,000 (the rouble taken as 2s.), and all profits, therefore, go to the Treasury.

The Bank issues notes, which must bear the following inscription:—

“The Banque de l'État exchanges notes for any amount for gold on the basis of 1 rouble =  $\frac{1}{15}$  Imperial containing 17·424 doli pure gold.”

The Bank is authorized to issue notes for £30,000,000 without metallic cover, but every issue above that limit has to be covered with the corresponding amount in gold. The former distinction between the Issue department and the Banking department (on the model of the Bank of England) has been abandoned.

One of the latest bank returns gives the following figures:—

notes in circulation £135,500,000

notes in reserve £6,800,000

stock of gold and silver £15,500,000

gold in reserve £109,600,000

gold abroad £19,800,000

credit balance of the Government £9,400,000

The Bank has branches in the following towns:—

Archangel, Askabad, Astrakhan.

Baku, Batum, Berdiansk, Bialystok, Blagovestchensk, Borisoglebsk, Bokhara.

Dwinsk.

Ekaterinburg, Ekaterinodar, Ekaterinoslaff, Elisabetgrad, Erivan.

Grodno.

Ishim, Iribit, Irkutsk, Ivano-Vosnesensk.

Jitomir.

Kalisz, Kaluga, Kaminiets-Podolski, Kazan, Khabarowak, Kharkoff, Kherson, Kishineff, Kieff, Kokand, Kosloff, Kostroma, Kuiadinsk Kursk, Kowno, Krasnovodsk, Krementchug, Kresty.

Libau, Lublin, Lodz, Lomzha.

Marinpol, Menselinsk, Minsk, Moghileff, Morshansk, Moscow, Murom.

Nijni Novgorod, Nikolaieff, Nowgorod, Novo Rossiisk.

Odessa, Orel, Orenburg, Orsk.

Penza, Perm, Petrokoff, Petropawlowsk, Piatigorsk, Plock, Poltava, Pskoff.

Radom, Reval, Riazan, Rjew, Riga, Romny, Rowno, Rostoff-o.-D., Rostoff-Yaroslavsky, Rybinsk.

Samarkand, Samara, Sarapul, Saratoff, Sevastopol, Semipalatinsk, Simbirsk, Smolensk, Stavropol, Sumy, Syzran.

Taganrog, Tashkent, Tamboff, Tcheliabinsk, Tchenstokoff, Tchernigoff, Tchistopol, Tchita, Teodosia, Tiflis, Tumen, Tobolsk, Tomaszew, Tomsk, Tula, Tzaritsyn, Tver.

Ufa, Uralsk.

Verkhni Udinsk, Vilna, Vitebsk, Vladikavka, Vladivostok, Vladimir, Vologda, Voronezh, Vyatka.

Warsaw.

Yalta, Yaroslaw, Yeletz, Yusovo.

## NEDERLANDSCHE BANK

(AMSTERDAM).

The capital of this Bank, which was established in 1814, amounts to £1,666,666 (taking £1 = fl.12).

The last return shows a note circulation of about £24,000,000 against a metallic cover of £13,000,000, of which £10,000,000 in gold and £3,000,000 in silver.

In 1907 the Bank had in stock £6,000,000 gold and £6,000,000 silver; the Bank has therefore since sold £3,000,000 worth of silver.

The Bank has one branch in Rotterdam, and agencies in the following towns:—

Alkmaar, Almelo, Arnhem, Deventer, Dordrecht, Enschedé, Gravenhage, Groningen, Hertogenbosch, Leeuwarden, Leiden, Maastricht, Meppel, Middelburg, Nijmegen, Tilburg, Utrecht, Zwolle.

## BANQUE NATIONALE DE BELGIQUE

(BRUSSELS).

This Bank, established in 1850, has a capital of only £2,000,000 (taking £1 = francs 25), and a note circulation of about £30,000,000 with a metallic cover of about £6,400,000, that is to say, a note of francs 100 is only covered by a metallic deposit to the extent of about francs 21.

The Bank has one branch in Antwerp, and the following agencies:—

Alost, Arlon, Ath, Audenarde, Boom, Bruges, Charleroi, Courtrai, Dinant, Eecloo, Furnes, Gand, Grammont, Hasselt, Huy, La Louvière, Liège, Louvain, Malines, Marche, Mons, Namur, Neufchâteau, Nivelles, Ostende, Peruwelz, Philippeville, Renaix, Roulers, Saint Nicolas,

Soignies, Termonde, Tirlemont, Tongres, Tournai, Turnhout, Verviers, Wavre, Ypres.

### BANCO DE ESPAÑA

(MADRID).

This Bank, established in 1849 and reconstructed in 1896, has a share capital of £6,000,000 (taking £1 = pesetas 25).

The note circulation amounts to £68,000,000 (in round figures) against a metallic cover of £48,000,000, or about 70 %. The cover consists of about 40 % in gold, and 60 % in silver.

A short time ago the Bank established branches in Paris and London, and its home branches are in the following towns:—

Albacete, Alcoy, Alicante, Almeria, Avilla, Badajoz, Barcelona, Bilbao, Burgos, Caceres, Cadiz, Cartagena, Castellon, Ciudad Real, Cordoba, Coruna, Cuenca, Gerona, Gigon, Granada, Guadalajara, Haro, Huelva, Huesca, Jaen, Jerez, Las Palmas, Leon, Lerida, Linares, Logrono, Lugo, Malaga, Murcia, Orense, Oviedo, Palencia, Palma, Pamplona, Pontevedra, Reus, Salamanca, San Sebastian, Santa Cruz (Tenerife), Santander, Santiago, Segovia, Sevilla, Soria, Tarragona, Teruel, Toledo, Tortosa, Valencia, Valladolid, Vigo, Vitoria, Zamora, Zaragoza.

### BANCO DE PORTUGAL

(LISBON)

was established in 1847 with a share capital of £2,700,000 (1 milreis taken as 48d.).

The note circulation amounts to about £20,000,000 with a metallic cover of £2,300,000.

The Bank has a branch in Oporto, and agencies in the following towns:—

Angra, Aveiro, Beja, Braga, Braganca, Castello, Branco, Coimbra, Evora, Faro, Funchal (Madeira), Guarda, Horta, Leiria, Porta Delgada (Azores), Portalegre, Santarem, Vianna, Villa Real, Vizeu.

### SCANDINAVIAN BANKS.

Although Denmark, Sweden, and Norway have agreed to have the same monetary system (see page 31), they did not come to an arrangement with regard to a uniformity of their note issue. Each of these countries has its own note-issuing bank. The only similarity in their banking law is that every country has declared the issue of notes a monopoly.

In **Denmark**, the National Bank of Denmark, founded in 1818 with a capital of £1,500,000, has the sole right to issue notes. The circulating notes without metallic cover may not exceed £1,500,000.

In **Sweden**, the Royal Bank of Sweden alone is allowed to issue notes. It was founded in 1656, is therefore older than the Bank of England, and has a capital of about £2,000,000, which belongs to the nation ; the amount of non-covered notes is limited to £5,500,000.

Formerly the “Enskilda Banks” (26 private banks) had also the right of issuing notes.

In **Norway**, the Bank of Norway, founded in 1814 with a capital of £550,000, is the only note-issuing Bank, and is not allowed to issue notes for more than twice the amount of metal in stock.

### SWITZERLAND.

Up to 1907 the issue of notes was free, and only subject to conditions which were easy to fulfil. To-day the note issue is declared a monopoly, and vested in the newly-formed “Schweizerische National Bank” (“Bank Nationale Suisse”) with head offices in Berne and Zürich.

The capital is £2,000,000, the issued notes must be covered with 40 % in metal ; but actually they are covered with  $\frac{2}{3}$  metal, as a stock of gold of £5,700,000 is deposited as cover for £8,600,000 notes.

### UNITED STATES OF AMERICA.

The United States possess no central institution to which the exclusive direction of the gigantic money movement in that economically developed Republic is entrusted, a lack which is periodically strongly felt.

The Federal Government issues notes which are legal tender for any amount; further, about 7,000 banks (so-called "National Banks") have the right of issuing notes. These banks are created under a law which dates from 1864, that is from a period when it was impossible to foresee the importance and extension of the present money movement. It is obvious that a statute which was in accordance with the requirements of 1864 cannot satisfy the entirely changed conditions of the present day. The economic organism now and then undergoes tremendous convulsions—we need only recall the events in 1902 and 1907—which point to a radical change in the organization of the banking institution.

The notes of the National Banks are **not** legal tender. The Government notes are green (hence the name "green-backs"). At present there are in circulation notes for \$336,000,000. Further, gold certificates are issued for about \$800,000,000, and silver certificates , , \$470,000,000, which are based on gold and silver of the corresponding value, then there must be counted Treasury notes for \$5,000,000, issued in 1890, against silver bars, that makes \$1,611,000,000 Government notes.

The formation of a National Bank is subject to conditions which could easily be fulfilled. The National Banks are obliged to accept each others' notes. At present such notes for \$652,000,000 are in circulation. They are covered by a deposit of 2 %. Government bonds at Washington amounting to \$652,000,000. The Government delivers unsigned note forms in exchange for the bonds.

The present circulation therefore consists of :—

Government notes for	-	-	\$1,611,000,000
National Bank notes ,,	-	-	\$652,000,000
Gold coins	„	-	\$795,000,000
Silver coins	„	-	\$153,000,000
<b>Total</b>	<b>-</b>	<b>-</b>	<b>\$3,211,000,000</b>

Besides the National Banks there are about 10,000 State Banks and Savings Banks, 1000 Trust Companies, and 1000 Private Banks.

The Banks established in New York form the "Associated Banks of New York," and are obliged to keep 25 % of their deposits in ready legal tender money.

The principal business of the American Banks is the receiving of money on deposit, and its lending on security ("loan"). The proportion between deposit- and loan-amount is of general interest, and is, therefore, cabled every week.

One of the latest returns of the New York Associated Banks of New York gives the following figures :—

Loans and discounts about	-	\$1,234,000,000
Deposits	„	\$1,234,000,000
Circulation	„	\$53,000,000
Reserves	„	\$14,000,000
Specie	„	\$251,000,000
Legal tender	„	\$71,000,000
U.S. Government deposits about		\$2,000,000

And the return of the State Banks and Trust Companies of Greater New York, which do not report to the New York Clearing House, states:—

Loans and discounts about	-	\$1,205,000,000
Deposits	,,	- \$1,286,000,000
Specie	,,	- \$127,000,000
Legal tender	,,	- \$23,000,000

We can see from these figures that the deposits with the Associated Banks are covered by the normal 25 %, and with the State Banks and Trust Companies only by 12 % in legal tender money.

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### **III. ARBITRAGE IN STOCKS AND SHARES.**



GENERALLY, all business on the London Stock Exchange is concluded for the coming account day, but bargains for immediate completion may also be entered into ("cash transactions"). The account days are fixed beforehand by the Committee of the Stock Exchange for the whole year. The settlement takes place twice a month, at the middle and end of the month, but the actual interval varies from 14 to 19 days.

Only for Consols, which are dealt in either for "cash" or for the end of the month, is a separate monthly settlement fixed.

The three days preceding every pay day are devoted to preparatory work in connection with the settlement. On the first of the three days all business which was done during the last fortnight in mining shares has to be arranged; on the second day, all bargains in the other shares and stocks entered into during the terminating account have to be adjusted; on the third day, the name of the person paying for the exchanged security is given (and as such names are written on a slip of paper (ticket) the day itself is called "ticket day"), and on the fourth day ("pay day") the actual completion of all bargains—delivery of the security dealt in, and paying of the differences—takes place.

The quotations for Consols and other Government Bonds, railway and other stocks are given in per cent, while the prices of shares are expressed in the actual value of one share.

The quoted prices—unlike those of some Continental Bourses—**include** all the interest dating from the last coupon payment, except in the case of “**Rupees**,” where the interest from the last dividend payment up to the settling day has to be added to the price.

In calculating the interest from one account to the next, the year is taken as having 365 days, while the Continental Bourses reckon the year equal to 360 days.

All stocks and shares passing through the Stock Exchange must be duly stamped, such stamp duties being fixed as follows:—

1. Securities delivered in form of **Certificate and signed transfer** pay duty of 1%, i.e.:—

	£		£	s.	d.
on 5 a stamp of	0	1	0		
10	„	0	2	0	
15	„	0	3	0	
20	„	0	4	0	
100	„	1	0	0	
1000	„	10	0	0	

2. Where the foregoing securities are delivered in form of shares or stock to **Bearer**, the stamp duty is three times as much, that is 3%.

3. Bonds bearing date after 1862, and prior to 1885, pay a stamp duty of  $\frac{1}{4}\%$ ; Bonds bearing date after 1885,  $2\%$ .

4. American and Foreign share certificates pay 1s. for every £20 ( $= \frac{1}{4}\%$ ).

5. Transfers of stocks and shares not on sale must pass with their market value and are subject to a duty of  $\frac{1}{2}\%$ .

**Contract notes** for sale or purchase of securities must bear the following stamps:—

	£	£	£	s.	d.
For a value of	5 and not exceeding	100	0	0	6
Exceeding	100	„	500	0	1 0
„	500	„	1,000	0	2 0
„	1,000	„	1,500	0	3 0
„	1,500	„	2,500	0	4 0
„	2,500	„	5,000	0	6 0
„	5,000	„	7,500	0	8 0
„	7,500	„	10,000	0	10 0
„	10,000	„	12,500	0	12 0
„	12,500	„	15,000	0	14 0
„	15,000	„	17,500	0	16 0
„	17,500	„	20,000	0	18 0
„	20,000	-	-	1	0 0

### Contract Notes

1. for carry-over transactions are subject to  $\frac{1}{2}$  of the above-mentioned stamp.
2. for single option transactions are subject to  $\frac{1}{2}$  of the above-mentioned stamp.
3. for double option transactions are subject to the full stamp.
4. between members of the Stock Exchanges in the United Kingdom are stamp free.

Where the face-value of foreign bonds is expressed in foreign money, such foreign money is always converted into English money at the following **fixed rates of exchange**:-

American	money : 5 dollars	equal to £1
Austrian	„ : 10 gold florins	
	or 24 kronen	
French	„ : 25 francs	
German	„ : 20 marks	
Indian	„ : 10 rupees	
Italian	„ : 25 lire	
Spanish	„ : 25 pesetas	

Every stock and share dealt in for the account can be, if convenient, "carried over" to the next account, and the charge for it is either called "**contango**" or "**back**".

"**Contango**" is the interest on the capital required for taking up the stock, and "carrying it over" to the next account, and is therefore debited to the buyer and credited to the seller. It is expressed either in form of the agreed money rate—as, for instance, 3 % or 4½ % p. a., etc.—or at a fixed charge per share (as 6d. or 2s., etc.), as in the case of Grand Trunk Third Preference shares, which were carried over at the price of 45 and a contango of 2s., which corresponds to a yearly interest of  $5\frac{1}{3}\%$  (2s., for one account, or  $24 \times 2s.$ , = 48s. for one year for a capital of £45).

The equivalent expression for contango on the Continental Bourses is "report".

Sometimes, when more has been sold than can actually be delivered, a particular stock or share is in such demand for carrying over that no charge is made for the money required; it is then said that the stock is carried over "**even**". When the demand for the stock in question is so strong that actually a bonus is offered for its lending, all the accounts of buyers of the said stock can then be carried over at a premium, which is called "**backwardation**" or "**back**". The corresponding German term, "Leihgeld" (money for the loan of the security), is far more to the point; the French Bourses call the back "**déport**".

The "back" can also be quoted, like the contango, in percentage of the capital concerned—e.g. 3 %. p.a., etc.—or as charge for one share—e.g. 6d. per share, etc.

Carry-over bargains are free of brokerage.<sup>1</sup>

The London Stock Exchange conducts business from 11 to 4 o'clock, and is closed on the following days:—

<sup>1</sup> Which varies from  $\frac{1}{16}$  to  $\frac{1}{4}$  for stocks, and from 3d. to 2s. 6d. for shares.

January 1, Good Friday, Easter Monday, 1 May, Whit Monday, 1 November, 25 and 26 December.

Of the provincial Stock Exchanges in Great Britain only the Stock Exchanges of Liverpool and Glasgow are important. The latter deals sometimes largely in Tinto and Tharsis shares at advantageous prices for the arbitrage.

## ARBITRAGE IN STOCKS AND SHARES WITH THE PARIS BOURSE.

Admission to the Paris Bourse is free to everybody.

The dealings on the Bourse in stocks and shares quoted in the **Official** price list of the Paris Bourse are entrusted solely to the "Compagnie des Agents de Change de Paris," a corporation consisting of 70 members (formerly 60), each of whom is appointed by the Government. Legally the Compagnie is not answerable for the dealings of its individual members, but practically it would always declare itself responsible in case of emergency, thereby rendering the prompt fulfilment of the contracts of each of its members an absolute certainty.

Stocks and shares not included in the "official list" are dealt with by the "syndicat des banquiers" or "coulissiers," and generally the market of the first-named group of securities is termed "Parquet," and the latter "Coulisse".

The "Parquet" (agents de change) settles twice a month—at the middle and the end; the "Coulisse" (coulissiers) only once a month—at the end of the month; but both markets also enter into cash transactions ("opérations au comptant").

French Rentes (like Consols in London) are only quoted for the end of the month. The carry-over of the securities ("reports") takes place on the 15th and 30th, or 31st; the

“tickets” pass on the 17th or 1st or 2nd, and the pay day for each account is fixed for the 18th or 2nd or 3rd of each month.<sup>1</sup>

Every security negotiated on the Paris Bourse must bear the French stamp; **but the shares of Companies which have entered into a special agreement with the French Fisc, with regard to the stamp duty, are exempt.**

In France the compounding of the stamp duty is also called “abonnement,” and such an “abonnement” must precede the appearance of any security in the official list. It is obvious **that every share officially quoted must be exempt from stamp duty.**

The Fisc publishes annually a list of companies which have compounded the stamp duty.

**Foreign Government Bonds pay a stamp duty of 1% of the nominal value with a minimum of 1 franc,** and when their market value has fallen below 50% of the face value, the stamp is reduced to  $\frac{1}{2}\%$ . (e.g. Greek Bonds).

Where the nominal value is expressed in foreign money, such foreign money must be converted into French money at a rate of exchange fixed annually. At present these rates are:—

£1 = fr. 25.22

Mexican dollar 1 = „ 2.55

Austrian crown 1 = „ 1.05,

and the stamp has to be paid in French money, according to the calculation.

**All other securities pay a stamp duty of 2% with a minimum of 2 francs;** the capital subject to stamp duty is divided into multiples of 20 francs.

<sup>1</sup> Credit balances of clients are only settled on the day following the account day.

**In France, as in some other countries, the dealings are subject to a tax**, according to which transactions in—

French Rentes pay  $1\frac{1}{4}$  centimes for each fr. 1000 capital dealt in.

Other securities pay 10 centimes for each fr. 1000 capital dealt in.

Carry-over transactions of Rentes pay  $\frac{5}{8}$  centime for every fr. 1000 capital.

Carry-over transactions of other securities pay  $2\frac{1}{2}$  centimes for each fr. 1000 capital.

**All the stocks and shares are quoted as in London—that is, including all accrued interest.**

Carry-over bargains (reports) are subject to half the ordinary brokerage, and are generally done at the average rate ("cours moyen").

The brokerage ("courtage") is 1 % for cash transactions,  $\frac{1}{2}\%$  of the nominal amount of Government bonds and  $\frac{1}{8}\%$  for shares for time bargains.

The Paris Bourse has no fixed rates of exchange for converting the nominal value of foreign securities into French money. Every stock is treated individually; sometimes £1 is taken as equal to fr. 25, sometimes to fr. 25.20 or fr. 25.25.

Every *Cash transaction* is quoted in the official market list, it is therefore possible to give an order at the average price ("cours moyen"). *Time bargains* are quoted at the opening of the Bourse ("premier cours") and at the closing ("dernier cours"); purchases or sales can accordingly be ordered "au premier cours" or "au dernier cours".

*Options* are dealt in "pour liquidation," "pour fin courant," "au quinze mois prochain" and "pour fin prochain," but never for a longer period than the end of the

following month. In active stocks business in options for the morrow ("pour demain") sometimes take place.

The value of *due coupons* is deducted from the price on the first day of the new settlement; French Rentes which are quoted ex coupon a fortnight before the coupon becomes payable, form an exception to this.

Stocks with a fixed interest are usually dealt in in annuity form, i.e. the amount of capital is not mentioned, but only its interest ("rente"). Accordingly, an order for £10,000 (fl. 100,000) Hungarian bonds, 4 %, would mean an order for florins 4,000 ("quatre mille Hongrois").

The most active securities of the London Stock Exchange quoted likewise on the Paris Bourse are:—

Rio Tinto, some of the South African Mining Shares, Banque Ottomane, Lombards, Suez Canal shares, and the following Government Bonds: Austrian Gold, Hungarian Gold, Argentine, Brazil, 1889, French 3 %, Italian 3  $\frac{3}{4}$  %, Spanish 4 %, Turkish New Unified, Egyptian, Greek, 1881 and 1884, English Consols, Portuguese, Servian 4 %, and Uruguay 3  $\frac{1}{2}$  %.

The Paris Bourse is open from 12 to 3 o'clock.

### RIO TINTO.

This leading copper share, in London called shortly "Tinto," and in Paris "Rio," is one of the favourites of the Paris Bourse. Large transactions take place daily in it. The shares are quoted in francs per share, their parity with London consequently being easy to find.

For instance, the Paris quotations of francs 1256 divided by the present cheque price of 25.20 gives the London par of £49.84, which result can also be obtained by the following method:—

Supposing the cheque price was 25, we should then have  $\frac{1256}{25}$  or  $\frac{1256 \times 4}{100} = £50.24$ ; but as the cheque price is

25.20, and as  $0.20 = 25 \times 0.8$ , we have to subtract the product of  $50.24 \times 0.8 = 0.40$  from  $50.24 = 49.84$ .

As Tintos are quoted in the official list, there is no stamp for delivery to pay, the brokerage of  $\frac{1}{8}\%$ . would amount to fr. 1.57 per share.

and the Government tax of 10 cents per

1000 fr. to „ 0.13

the expenses per share would be fr. 1.70

## BANQUE OTTOMANE.

These shares have a nominal value of fr. 500, but only fr. 250 are called up.

The French quotation of shares with uncalled capital is given, as if they were fully paid, and their actual value is equal to the price minus the uncalled capital.

The present quotation of Ottoman Bank shares of 607 is therefore equal to  $607 - 250 = \text{fr. } 357$  at  $25.20 = \text{£14.166.}$

Brokerage  $\frac{1}{8}\%$  = fr. 0.76, Government tax = 0.10; expenses per share therefore = fr. 0.86.

## LOMBARD SHARES AND SUEZ CANAL SHARES.

The parity of these shares is to be calculated on the basis of the cheque price plus or minus expenses, according to purchase or sale.

## SOUTH AFRICAN AND AUSTRALIAN SHARES.

The stamp on shares of companies which have not compounded the stamp duty is 2 francs ; this must be taken into consideration in calculating the parity, which can be ascertained in the same manner as that of Lombard shares (see above).

The following companies :—

Buffelsdoorn	Lancaster
Champ d'Or	„ West
Charterland Goldfields	May Cons.
Cons. Goldfields	Oceana
„ Main Reef	Rand Mines
East Rand Prop.	Robinson South African
Ferreira Gold	„ Deep
Frank Smith	„ Randfontein
French Rand	Roodepoort Central Deep
Geduld Prop.	Rose Deep
Geldenhuis Deep	Simmer & Jack (New)
„ Estate	South Afr. Gold Trust
Goch New	Steyn New
Goerz & Co.	Transvaal Goldfields
Golden Horse Shoe Est.	Village Main Reef
Johannesburg Consol.	Wemmer
Kleinfontein New	

have entered into an agreement with the French Fisc with regard to the stamp duty, their shares therefore circulate unstamped.

In arbitrage operations in mining shares, we must always remember that London deals in **registered shares**, and Paris only in **bearer shares**. The arbitrage must therefore always take into account the expenses which are connected with the exchange of registered shares into bearer shares, or vice versa.

These expenses consist of :—

The English stamp duty.

The French „ „ „

The fixed fees of the share exchanging companies.

If the company has compounded the French stamp duty, then we need not calculate the French stamp. But

there are companies which have not come to an arrangement with the French Fisc (as the De Beers, and the Chartered Company), and in such cases we have to consider the French stamp as well.

Let us take an example of an arbitrage operation in De Beers shares :—

Bought in London : 100 De Beers at £20 = £2000.

Sold in Paris : 100 De Beers at fr. 510, and bought forward cheque London 25·25.

The actual sending of the shares to Paris in order to complete the bargain there would require :—

	£	s.	d.
The payment of 1% English stamp on £2000 =	20	0	0
,,      stamp at the company (10 warrants at 6s.) - - - =	3	0	0
,,      Conversion fee at the com- pany (1s. per share) - - - =	5	0	0
	<hr/>	<hr/>	<hr/>
	£28	0	0

or fr. 700, while in Paris we would have to pay a stamp duty of ,, 128 (10 warrants at 10 shares at fr. 12·80)  
fr. 828, or fr. 8·28 per share.

In Paris we would be credited for

100 De Beers at fr. 510 with	fr. 51,000
minus the above-mentioned expenses of ,,	828
	<hr/>
	fr. 50,172

for which amount we would receive a cheque of £1987, that is to say the transaction would have produced a loss of £13. But the arbitragers think differently. They consider the bargain a good one, as they never intend to take up the shares in London, and to deliver them in Paris. They simply await an opportunity to sell 100 De Beers in

London, and to replace them at the same time in Paris without a loss ; they are waiting, as it is said, " to turn the account ". In so doing, there remains open the forward purchase of £2000 cheque London at 25·25. But as that rate of exchange does not involve any considerable risk, the arbitrager does not hurry its re-sale. In other words, many arbitrage transactions in mining shares are based upon the heavy expenses connected with the actual delivery. In less highly priced shares (Chartered, East Rand, Gold-fields, etc.) these expenses are, of course, much lower, but the arbitrager must, nevertheless, always take them into account.

### **FRENCH 3 %. RENTES.**

These are dealt in in the rent (annuity) amount, so that a bargain of fr. 3000 Rente is equal to a transaction in fr. 100,000 capital, and a business in £4000 French Rente in London would correspond to an operation in fr. 3000 Rente in Paris.

The value of the coupons is deducted on the Bourse a fortnight before the coupons fall due, viz., 15 December, 15 March, 15 June, and 15 September.

### **SPANISH 4 %. (SEALED).**

In Paris these bonds are commonly called " Exterieure "—bonds of the exterior debt of Spain—and only sealed ones (" titres estampillés ") are negotiated as in London.

The loan itself was issued in 1882 for the conversion of the old 3 % debt in bonds of 100, 200, 1000, 2000, 4000, 6000, 12,000 and 24,000 pesetas.

These amounts were converted into French money at the rate of

$$\text{fr. 1} = \text{p. 1},$$

and into English money at the rate of

$$\text{£1} = \text{p. 25·20}.$$

A bond of p. 24,000 was therefore taken as equal to a bond of £952 6s. Each of the bonds can be sold for cash, while time bargains in them are limited to a minimum of :—

p. 50,000 capital (p. 2000 Rente) in Paris, and to  
p. 24,000 capital (£952 6s.) in London,

which latter amount is also called “ **one stock** ”.

A Paris transaction in **p. 4000 rente** is therefore equal to a London bargain of

$$\begin{aligned}
 \text{p. 100,000 capital} &= \text{p. 96,000} + \text{p. 4000} \\
 &= 4 \times (\text{£952 6s.}) + \text{£158 14s. 4d.} \\
 &= 4 \text{ English stock} + \text{£158 14s. 4d.} \\
 &= \text{£3809 4s. 0d.} \\
 &+ \text{£158 14s. 4d.} \\
 &= \underline{\text{£3967 18s. 4d.}}
 \end{aligned}$$

To find the English stock-amounts corresponding to the French stock amounts quickly, the following table is generally used :—

4% SPANISH BONDS.						
French Amounts.			English Amounts.			
Fr.	£	s.	d.	£	s.	d.
1,000 Rente	991	19	7	952	6	0
2,000	1,983	19	2	1,904	12	0
3,000	2,975	18	9	2,856	18	0
4,000	3,967	18	4	3,809	4	0
5,000	4,959	17	11	4,761	10	0
6,000	5,951	17	6	5,713	16	0
7,000	6,943	17	1	6,666	2	0
8,000	7,935	16	8	7,618	8	0
9,000	8,927	16	3	8,570	14	0
10,000	9,919	15	10	9,523	0	0
11,000	10,911	15	5	10,475	6	0
12,000	11,903	15	0	11,427	12	0

Assuming that “ **one stock** ” (p. 24,000) is taken equal

to 1 shilling-stock, a bond of p. 1000 is called a "halfpenny stock," as  $\frac{1}{2}$ d. =  $\frac{1}{24}$ s.

According to that expression p. 4000 Rentes (p. 100,000 Capital) would be equal to stock of the denomination 4s. 2d.

A Paris quotation of 89 at a cheque price of 25.20 would therefore correspond to the London quotation  $89 \times \frac{25}{25.20} = 88.29$ .

Instead of doing the multiplication and division, we could also find the solution by deducting 0.8% of 89 from 89 (taking  $25.20 = 25 + 0.8\%$  of 25), and we would have  $89.00 - 0.71 = 88.29$ .

Brokerage  $\frac{1}{2}\%$ , stamp for delivery 1%.

Small bonds are always in great demand (on the cash market), and quote from 1 to 4% premium.

### ENGLISH CONSOLS.

Sometimes small dealings take place in them for cash ("au comptant"). The fixed exchange rate is £1 = fr. 25.20, so that a cheque price of 25.20 makes the Paris price equal to the London price.

A higher cheque price, for instance 25.25, would necessitate the subtraction of 2% ( $25.25 - 25.20 = 0.05 = 2\%$ ) from the Paris quotation; a lower cheque price, say for instance 25.15, would require the addition of 2% ( $25.20 - 25.15 = 0.05 = 2\%$ ) to the Paris price in order to establish the parity.

Brokerage  $\frac{1}{2}\%$ , French stamp 1%.

### 4% BRAZIL, 1889.

Fixed rate of exchange: £1 = 25.20, and for the calculation of the parity, we refer to the remarks about English Consols.

The value of the coupons is deducted from the price on April 3 and October 3.

### EGYPTIAN STOCK.

While in former years these stocks formed the bulk of the transactions on the Paris and London Stock Exchange, they are to-day scarcely mentioned in either of these markets. Their parity is to be calculated on the basis of the cheque price.

### ITALIAN $3\frac{3}{4}\%$ BONDS.

These bonds were formerly 5% bonds, hence the Paris custom of quoting their price for a rent amount of lire 2500, which therefore corresponds to a capital of lire 50,000, and makes the London quantity of £2000 equal to the Paris quantity of lire 2500.

As the value of the lire is fixed

in London at £1 = lire 25, and

in Paris „ fr. 1 = lire 1,

the calculation of the parity is simple enough.

The price of **103·80 in Paris** at a cheque price of 25·20 would be equal to  $103\cdot80 - 103\cdot80 \times 0\cdot8\%$ . (as  $25\cdot20 = 25 + (25 \times 0\cdot8\%) = 103\cdot80 - 0\cdot83 = 102\cdot97$  in London.

Brokerage  $\frac{1}{2}\%$ , stamp 1%.

### 4% AUSTRIAN AND 4% HUNGARIAN GOLD RENTES.

The nominal value of these bonds is expressed in gold florins of the old Austrian-Hungarian currency.

Their fixed exchange rate being :—

In Paris gold florin 1 = fr. 2·50.

In London gold florins 10 = £1,

the parity is therefore to be calculated at the cheque price (like Italian bonds).

The dealings in Paris take place in multiples of florins 400 Rente = fl. 10,000 capital, so that £4000 stock in London is equal to fl. 1600 Rente in Paris.

Brokerage  $\frac{1}{2}\%$ , stamp  $1\%$ .

#### **NEW 4% UNIFIED TURKISH STOCK.**

This new stock is quoted in per cent for obligations of fr. 500 (20 francs Rente), and fr. 2500 (100 francs Rente).

At the price of 89, the former would cost fr. 445, the latter fr. 2·225.

The parity is to be calculated at the cheque price like the parity of Italian, Spanish bonds, etc.

#### **ARGENTINE BONDS.**

Comparatively speaking, very few of these stocks are known in Paris, and even in these few, business is rarely done.

Their parity is easily calculated on the basis of the cheque price.

Sometimes transactions take place in the 5% loan of 1886, quoted fr. 516 (for the fr. 500 obligation), and in the 4% Rescission loan of 1896, quoting in per cent (81·50). A £100 bond of the latter would cost £81·5 (at the fixed rate of exchange £1 = fr. 25) = fr. 2037·50, which amount at the cheque price of 25·20 (for instance) would be equal to £80 17s.

#### **GREEKS.**

Few cash transactions take place in the loans of 1881 and 1884 ("Hellénique"), which are quoted in francs for obligation of fr. 500.

The parity is to be calculated at the cheque price.

### PORtUGUESE.

All three series of the new 3% stock are quoted, but transactions take place only in the obligations of the first series, which are of a nominal value of £20 and £100.

The price is quoted in per cent, and the fixed rate of exchange is **25·25**.

£100 stock at a price of 65, for instance, would therefore cost at a cheque price of 25·20 : £65  $\times \frac{25·25}{25·20} =$  £65·13, which result can also be obtained by the following method :  $25·25 - 25·20 = 0·05 = 2\%$ , which of 65 = 0·13, therefore parity 65·13.

### SERVIAN BONDS.

The price is in per cent, the obligations are issued for fr. 500 capital (frances 20 Rente) fr. 2500 capital (fr. 100 Rente), and fr. 5000 capital (fr. 200 Rente).

### URUGUAY $3\frac{1}{2}\%$ .

Obligations for £20 and £100, price in per cent.

Fixed rate of exchange, 25·25.

The parity is therefore to be calculated like that of Portuguese Bonds.

Of the provincial Bourses in France only the **Bourse of Lyons** is important.

The dealings there—between 11 and 12·30—are after the model of the Paris Bourse, and stock positions open in Lyons can always be made up with the Paris Bourse free of charge.

## ARBITRAGE WITH BRUSSELS.

The business concluded on the Brussels Bourse is either for cash or for account, which takes place twice a month, 15th and 30th.

The securities, with few exceptions, are dealt in as in London and Paris, including accrued interest, and the quotations are given for bonds in per cent, and for shares at the actual value of the shares.

The fixed rates of exchange for converting the nominal value of securities expressed in foreign money into Belgian money are the following:—

£1 =	fr. 25 for Turkish stock
£1 =	,, 25·20 for Russians, Brazils and Uruguays
mark 1 =	,, 1·25
\$1 =	,, 5·40
Austr. fl. 1 =	,, 2·50

At present the common securities, which are dealt in in London and Brussels, are : Rio Tintos, Brazil 4 %, Portuguese 3 %, and Turkish Unified.

Rio Tinto shares settle only once a month (on the 30th).

Spanish 4 % bonds which are quoted in Brussels are not "sealed" bonds, and their price has therefore only theoretical interest.

Brokerages are the same as on the Paris Bourse, and the dealings take place between 12 and 3 o'clock.

## ARBITRAGE WITH THE BERLIN BOURSE.

Every merchant is allowed to frequent the Berlin Bourse subject to easily fulfilled conditions.

The regular visitors are divided into bankers, dealers, and brokers. The Bourse Committee appoints some

brokers as "sworn brokers," whose duty it is to quote officially the prices of the various stocks, shares, foreign bills, and moneys.

The dealings are for cash or for monthly settlement, the option day is generally fixed for the 28th (option time 1 o'clock), the carrying-over day for the 28th, and the pay day for the 30th or 31st.

The stocks and shares are quoted ex accrued interest, which therefore has to be added to the price, as, for instance, the price of German 3% Rente is given at 91·50; that means marks 91·50 for every marks 100 stock, **plus** 3% interest on 100 from the last coupon payment (1 January or 1 July) up to the account day in question.

The practice of dealing with securities ex accrued interest makes it necessary to bring the actual dividend into harmony with the quotation, that is in case the actual dividend differs from the calculated interest, such difference ("coupon difference") has, after the payment of the dividend, to be considered in the price, i.e. has to be added to, or subtracted from it.

Where the nominal value of a security is expressed in foreign money, such foreign money has to be converted into German money at the following fixed exchange rates:—

£1	-	-	-	-	-	= m.	20·40
United States	-	-	-	-	\$1 = ,,	4·20	
Rouble	-	-	-	-	1 = ,,	2·16	
Old gold rouble	-	-	-	-	1 = ,,	3·20	
Old Austrian paper florin	-	-	-	-	1 = ,,	1·70	
,, gold	,,	-	-	-	1 = ,,	2·00	
New Austrian krone	-	-	-	-	1 = ,,	0·85	
Dutch florin	-	-	-	-	1 = ,,	1·70	
Franc, lire, or peseta	-	-	-	-	1 = ,,	0·80	
Scandinavian krone	-	-	-	-	1 = ,,	1·12½	
Peso	-	-	-	-	1 = ,,	4·00	

The arbitrage with the Berlin Bourse is at present handicapped on account of the heavy German stamp duties, which have been fixed as follows:—

2½ % for foreign shares (2 % for inland shares)  
 1 %,      „      obligations  
 6 %,      „      Government bonds;

besides, there is a tax to pay on every transaction, amounting to  $\frac{2}{10}$  % for Government bonds and foreign money (coins and bank notes), and  $\frac{3}{10}$  % for shares.

The brokerage for shares is 20 pf. per share, and for bonds  $\frac{1}{2}$  %.

The business hours of the Berlin Stock Exchange are from 12 to 3 o'clock.

### GERMAN 3 %.

The quotation **91·50** end December corresponds to  
 $91\cdot50 + 3\%$  int. on 100

for 6 months at 0·25 =  $\frac{1\cdot50}{m. 93}$

and by the following equations:—

$$\begin{aligned} \text{£}x &= \text{£}100 \text{ stock} \\ 100 &= 2000 \text{ marks (fixed)} \\ 100 &= 93 \text{ m. (price)} \\ (\text{cheque price}) 20\cdot46 &= \text{£}1 \\ x &= \frac{93}{1\cdot025} = 90\cdot91 \end{aligned}$$

we find the London parity **90·91**.

In case of stock delivery, no stamp duty has to be calculated, as the bonds are exempt from such German stamp duty.

**ITALIAN  $3\frac{3}{4}$  %.**

The quotation of **103·50** end December =

103·50

+  $1\cdot875$  ( $3\frac{3}{4}$  % int. on 100 for 6 m.)

lire **105·375**

and the following chain :—

$\mathcal{L}x$  = £100 stock

100 = 2500 lire (fixed)

100 = 105·375 (price)

100 = 80 pf. (fixed)

(cheque price) **20·46** = 1

$x = \frac{105\cdot375}{1\cdot023} = 103$

gives as London parity **103**.

In case of stock delivery, a stamp duty of 0·60 has to be taken into consideration.

Berlin quotes Italian Rentes in lire capital, so that lire 250,000 stock corresponds to £10,000 stock in London.

**CHINESE 6 % GOLD, 1895.**

The quotation of **104·40** end December

= 104·40

+  $3$  ( $6$  % int. on 100 for 6 m.)

**107·40**

at the fixed rate of exchange £1 = m. 20·40, and a cheque price of 20·46, give the following chain :—

London  $\mathcal{L}x$  = 107·40 £ Berlin

1 = 20·40 (fixed)

20·46 = £1 London

$x = 107\cdot08$

or, difference  $20\cdot40/20\cdot46 = 0\cdot06 = 3\%$ , and  $107\cdot40$  less  $3\% = 107\cdot40 - 0\cdot32 = 107\cdot08$ .

In case of stock delivery, a stamp duty of  $0\cdot60$  has to be taken into consideration.

### CHINESE $4\frac{1}{2}\%$ OF 1898.

The Berlin quotation 91 for these bonds for account end December would at a cheque price of  $20\cdot44$  correspond to :—

$$91 + \frac{1\cdot50 \text{ (4 months' int. } 4\frac{1}{2}\% \text{ from } 92\cdot50)}{92\cdot50} \text{ 1 Sept. to 30 Dec.)}$$

$$92\cdot50 \times \frac{20\cdot40 \text{ fixed}}{20\cdot44 \text{ cheque}} = 92\cdot31 \text{ bare parity.}$$

(Instead of doing the multiplication and division, we take the difference between  $20\cdot44$  and  $20\cdot40 = 4$  pf. =  $2\%$ , which on  $92\cdot50 = 0\cdot19$ , and  $92\cdot50 - 0\cdot19 = 92\cdot31$  gives the parity.)

In case of a sale and actual delivery of the stock, the expenses would amount to—

$$\begin{array}{r} 0\cdot60 \text{ for stamp} \\ 0\cdot05 \text{,, brokerage} \\ 0\cdot02 \text{,, tax} \\ \hline 0\cdot67 \end{array}$$

which deducted from  $92\cdot31$  shows **91.64** as parity for a sale.

In case of a purchase, we have to add the expenses for brokerage =  $0\cdot05$

$$\text{tax} = 0\cdot02$$

$0\cdot07$  to the price of  $92\cdot31 =$

$92\cdot38$ , and find **92.38** as parity for a purchase.

**MEXICAN 5%.** 1889.

The quotation of 101.50 end December is equal to—

$$\begin{aligned}
 & 101.50 \\
 + & \frac{1.25}{102.75} \text{ (3 months int. on 100 at} \\
 & \text{5% from 1 Oct. to} \\
 & \text{31 Dec.)} \\
 \text{parity} & = \frac{102.75 \times 20.4 \text{ (fixed)}}{20.46 \text{ (cheque)}} = 102.44
 \end{aligned}$$

or, difference  $20.40/20.46 = 6$  pf. = 3% and  $102.75$  minus  $3\%$  =  $102.75 - 0.31 = 102.44$ .

**NEW 4% TURKISH UNIFIED.**

The Berlin quotation of 88 end December at a cheque price of 20.46 corresponds to a London parity of :—

$88 + 1.33$  (interest from 1 September to 31 December = 4 m. at 0.33 per month) =  $89.33 \times \frac{20.40 \text{ (fixed)}}{20.46 \text{ (cheque)}} = 89.06$ , or, difference  $20.40/20.46 = 6$  pf. = 3%, and  $89.33$  minus 3% =  $89.33 - 0.27 = 89.06$ .

**SOUTH AUSTRIAN RAILWAY SHARES**

(LOMBARDS).

The shares of a nominal value of m. 400 are quoted in per cent (for 100 marks), and the price of 18 end December is therefore equal to

$$\begin{aligned}
 & 18 \\
 + & 4 \text{ (4% interest on 100 for 1 year, from 1 Jan.} \\
 & \text{m. 22 to 31 Dec.) or marks 88 for marks 400,} \\
 \text{which in English money at } & 20.46 \text{ would be } \frac{88}{20.46} = \text{£}3\frac{13}{16}.
 \end{aligned}$$

**CANADIAN PACIFIC RAILWAY SHARES.**

These shares are quoted in United States dollars per share ex 4% interest from 1 July at the fixed exchange rate of \$1 = m. 4.20.

The Berlin quotation of 120 end December is therefore equal to :—

$$120 \\ + \frac{2}{122} (4 \% \text{ of } 100 \text{ for } 6 \text{ m. at } 0.33)$$

and the following chain :—

$$\text{London } \$x = \$122 \text{ Berlin} \\ 1 = \text{m. } 4.20 \text{ (fixed)}$$

$$(\text{cheque}) 20.46 = \text{£}1 \\ 1 = \$5 \text{ London (fixed)}$$

gives the London parity of 125.21

As the expenses (stamp + tax + brokerage) amount to nearly \$3, the arbitrage could only sell in Berlin when the shares in London could be bought \$3 below parity.

Experience has shown that the London price of Canadian Pacific shares reaches Berlin quicker via New York than by the direct route, and some arbitragists therefore prefer to cable accordingly.

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Of the provincial German Bourses only those of Hamburg and Frankfort-on-Main are important. The dealings there are after the model of the Berlin Bourse.

### ARBITRAGE WITH AMSTERDAM.

Amsterdam quotes all securities, with few exceptions, **exclusive** of interest, like Berlin. Amongst the exceptions are the shares of American Railways, for which the price is given **inclusive** of accrued interest. All transactions are for **cash**.

The **fixed rates of exchange** for converting foreign money into Dutch money are :—

£1	-	-	-	-	= fl. 12
1 German mark	-	-	-	-	= „ 0·60
1 American dollar	-	-	-	-	= „ 2·50
1 gold rouble	-	-	-	-	= „ 2
1 paper rouble	-	-	-	-	= „ 0·36
1 franc or 1 lira or 1 peseta or 1 Austrian krone	-	-	-	-	= „ 0·50
1 Austrian florin	-	-	-	-	= „ 1
1 Austrian gold florin	-	-	-	-	= „ 1·20
1 rouble	-	-	-	-	= „ 1·28
1 Portuguese milreis	-	-	-	-	= „ 2·70

As example for the parity calculation of **American railway shares**, we take the price of **Union Pacific shares**  $78\frac{1}{4}$ .

London \$x = \$78·25 Amsterdam (share price)

1 = 2·50 fl. (fixed)

(cheque price) 12·0625 = £1

1 = \$5 London (fixed)

$$x = \frac{78\cdot25 \times 5 \times 2\cdot50}{12\cdot0625} = \frac{78\cdot25 \times 5}{12\cdot0625 \times 4} = \frac{78\cdot25}{12\cdot0625 \times 8} = 81\cdot09$$

We see from this calculation that the parity of American railway shares can be found by dividing the price by eight times the cheque price.

As example for the parity calculation of **bonds** we take the price of 3 %. Portuguese first series =  $63\frac{11}{16}$ .

The interest of such bonds is reckoned at 3 % on 100 from either 1 January or 1 July. In the account of a purchase on 30 December, for instance, interest for six months would appear from 1 July up to 30 December with 1·50.

$$\begin{array}{r}
 \text{The price to be calculated would be } 63\frac{1}{6} = 63.68 \\
 + \quad 1.50 \\
 \hline
 65.18
 \end{array}$$

and by the following equations :—

$$\begin{array}{l}
 \text{London £}x = \text{£}100 \text{ stock} \\
 100 = 65.18 \text{ Amsterdam price} \\
 1 = 12 \text{ fl. (fixed)} \\
 (\text{cheque price}) 12.0625 = \text{£}1 \text{ London} \\
 \text{we find } x = 65.18 \times \frac{12}{12.0625} = 64.84
 \end{array}$$

Brokerage  $\frac{1}{16}$  to  $\frac{1}{8}\%$ .

Business hours of the Amsterdam Bourse are 1 to 3 o'clock.

### ARBITRAGE WITH VIENNA.

Vienna quotes, like Berlin and Amsterdam, all bonds and shares (with very few exceptions) **exclusive** of accrued interest, which has, therefore, to be added to the price in finding the parity. All securities are dealt in for cash with the exception of a few, for which a quotation for account at the end of the month is also given.

Bonds are quoted in per cent, shares per actual share value.

The **fixed rates of exchange** for converting foreign money and the old Austrian money into the present kronen money are :—

£1 - - - -	= 24 kronen
1 German mark -	= 1 krone 18 heller
1 franc or lira -	= 96 heller
1 old Austrian gold florin	= 2 k. 40 h.
1 „ „ florin -	= 2 k.

The Government tax for transactions in—

Bonds is 40 heller per 10,000 kronen

Shares is 1 krone „ „ „

As an example for the parity calculation, we take the price of **Austrian 4% Gold Rente = 120·75.**

The 4% interest on gold florins 50 from the last coupon (either 1 October or 1 April) has to be added. In an account for a purchase effected on 30 December, 4% interest for 3 months (1 October-30 December) with  $\frac{1}{2}$  gold florin = K. 1·20 would have to appear; the price to be calculated would therefore be 120·75 plus 1·20 = 121·95, and by the following chain :—

$$\begin{aligned}
 \text{London £}x &= \text{£}100 \text{ stock} \\
 100 &= 1000 \text{ gold fl. (fixed)} \\
 50 \text{ (fixed)} &= 121\cdot95 \text{ kr.} \\
 (\text{cheque price}) 239\cdot55 &= \text{£}10 \\
 \hline
 x &= 121\cdot95 \times \frac{2}{2\cdot3955} = 101\cdot81.
 \end{aligned}$$

### SOUTH AUSTRIAN RAILWAY SHARES (LOMBARDS).

These shares are amongst the few which are quoted **inclusive** of accrued interest; their price (**88 kronen**) divided by the cheque price therefore shows the parity.

$$\text{Parity} = \frac{88}{23\cdot955} = \text{£}3\cdot67 = \text{£}3\frac{11}{16}$$

### ANGLO-AUSTRIAN BANK SHARES.

The interest on these shares is calculated at 5% per annum on 240 kronen (the nominal value of the shares) from 1 January up to the date of delivery. In an account for a purchase effected on 30 December, for instance, the interest would appear at  $\frac{5 \times 240}{100} = 12$  kronen.

To the Vienna price of 282 the interest of 12 kronen has to be added, which would give 294 kronen, or at a cheque price of 23·955, a parity of  $\frac{294}{23\cdot955} = \text{£}12\cdot27$ .

Brokerage  $\frac{1}{2}\%$ .. Business hours of the Vienna Bourse are 12 to 2 o'clock.

## ARBITRAGE WITH NEW YORK.

Only proprietors of seats are admitted to the New York Stock Exchange. A seat becoming vacant, through death or resignation of its owner, is sold by public auction. Its price depends upon the general prosperity, and has already been as high as \$95,000.

All bargains on the New York Stock Exchange are for "cash"; the stock dealt in has therefore to be paid for on the following day, which rule sometimes causes great changes in the weekly returns of the Associated New York Banks.

The stocks and shares are quoted **inclusive** of all accrued interest (like in London and Paris), the stocks in dollars per cent, the shares in dollars per share; their parity is therefore easy to establish.

**For instance:** The New York quotation of **Atchison** shares **68** corresponds to the London price of **70½** at a cable transfer price of **4·84**, according to the following chain:—

$$\begin{aligned}
 \text{London \$}x &= 68 \text{ \$ New York} \\
 4\cdot84 &= \text{£}1 \\
 1 &= 20\text{s.} \\
 4 &= 1 \text{ \$ London (fixed)} \\
 \hline
 \end{aligned}$$

or, in general, **the London parity is equal to: ten times the New York price divided by twice the cable transfer price.**

To avoid the division, we may apply the following method:—

Supposing the cable transfer price should be \$5, then the New York share price would be exactly equal to the London price, as according to the above formula, we shall then have:—

$$\text{London parity} = \frac{10 \times \text{New York price}}{2 \times 5} = \text{New York price.}$$

Consequently, we may take the cable transfer price of \$5 as calculation basis, subtract from it the actual rate of telegraphic transfer, and find the part of the share price corresponding to the exchange difference. The New York share price plus that part will then give the parity.

**For instance :** In the above example, New York price for Atchison shares 68 and 4·84 for cable transfer, we have :—

$$5 - 4\cdot84 = 0\cdot16 = 3\cdot2\% \text{ of } 5, \text{ and } 3\cdot2\% \text{ of } 68 = 2\cdot18.$$

The London parity of the New York quotation **68** would then be  $68 + 2\cdot18 = 70\cdot18$ .

The London parity of a New York price **68** with a simultaneous telegraphic transfer rate **4·875** would be **69·70**, according to the following calculation :—

$$5 - 4\cdot875 = 0\cdot125 = 2\frac{1}{2}\% \text{ of } 5, \text{ and} \\ 2\frac{1}{2}\% \text{ of } 68 = 1\cdot70, \text{ and } 68 + 1\cdot70 = 69\cdot70.$$

To find the New York parity of a given London price, say, for instance, of Erie shares quoting **30** in London at a simultaneous exchange of **4·84**, we employ the following equations :—

$$\text{New York } \$x = \$30 \text{ London}$$

$$1 = 4s. \text{ (fixed)}$$

$$20 = £1$$

$$1 = 4\cdot84$$

$$\begin{aligned} x &= \frac{30 \times 4 \times 4\cdot84}{20} = \frac{30 \times 4 \times 5 \times 4\cdot84}{100} \\ &= \frac{30 \times 2 \times 4\cdot84}{10} \\ &= \mathbf{29\cdot04} \end{aligned}$$

or, in general, **the New York parity of a London price is equal to the tenth part of the London price multiplied by twice the cable transfer price.**

Brokerage,  $\frac{1}{8}\%$  to  $\frac{1}{4}\%$ . Business hours of the New York Stock Exchange are 10 to 4 o'clock.

The New York Stock Exchange is closed on the following days: 1 January, 12 February (Lincoln's birthday), 22 February (Washington's birthday), Good Friday, 30 May (Decoration day), 4 July (Independence day), first Monday in September (Labour day), first Tuesday in November (Election day), last Thursday in November (Thanksgiving day), and December 25.

### ARBITRAGE IN RUPEE PAPER.

This stock is the **only security** dealt in on the London Stock Exchange **exclusive of accrued interest**, which is calculated at  $3\frac{1}{2}\%$  on the nominal value of 100 rupees from 30 June or 30 December up to the date of delivery.

But the price is calculated at the fixed rate of 2s. per rupee, while the interest is converted into English money at the fixed rate of 1s. 4d. per rupee. As the Indian markets (Bombay and Calcutta) likewise quote the stock exclusive of interest, it follows that they charge exactly the same interest as London, and the arbitrage, therefore, need not take any interest into account.

The **London parity** of the Indian price **99** at a simultaneous t.t. rate of 1s. 4d. would be **66**, according to the following chain :—

London rupee  $x = 100$  rupee stock.

100 = 99 rupee currency (price).

1 = 16d.

24 = 1 London rupee (fixed).

$$\underline{x = 99 \times \frac{16}{24} = 99 \times \frac{2}{3} = 66.}$$

The **Indian parity** of the London price **64** at the exchange rate of 1s. 4d. would be **96**, according to the following calculation :—

Indian price  $x = 100$  rupee stock.

100 = 64 rupee London (price).

1 = 24d. (fixed).

16 = 1 rupee currency.

$$x = 64 \times \frac{24}{16} = 64 \times \frac{3}{2} = 96.$$

The **Colonial Stock Exchanges** (Johannesburg, Adelaide, Melbourne, etc.) quote all the shares dealt in like London, in English money. Arbitrage transactions between London and these Stock Exchanges, therefore, do not require comment ; a simple subtraction of the London price from the Colonial gives the difference.

## ARBITRAGE WITH CONSTANTINOPLE.

All stocks and shares are quoted **inclusive** of accrued interest—as in London. The prices are for cash with the exception of 4 %. Turkish unified, tobacco shares and Turkish lottery bonds, which are also dealt in for the fortnightly account. The quotations are given for bonds in per cent, and for shares in the actual value of the shares either in Turkish or French or English money.

As an example of a bond arbitrage between London and Constantinople, let us take an operation in 4 % **Turkish unified** which we bought at £T99.75 in Constantinople at the simultaneous exchange rate of £T110 = £100 cheque. The following calculation shows 90.68 as English parity :—

£  $x$  = £100 stock

100 = £T99.75 (price).

110 = £100

Sometimes a considerable option business takes place in the securities which are quoted for the account.

The Bourse is open from 9 to 5 ; brokerage  $\frac{1}{2}\%$ .

### ARBITRAGE WITH ALEXANDRIA.

The improvement in the finances of Egypt has stopped the trade in bonds, which in former years was very flourishing. The interest to-day is mostly absorbed by dealings in industrial shares which are only quoted for cash, either in Egyptian or in English money.

The prices are given on the model of the London Stock Exchange, i.e. **inclusive** of accrued interest.

The sovereign is always converted into Egyptian money on the basis of £1 = 97½ piastres (see p. 34).

A London quotation of 103 for 4% **Egyptian unified** at the exchange of £1 = 97 pi. would correspond to the price of 102·47 in Alexandria, according to the following chain :—

£ x = £100 stock.

100 = £103 (price):

1 = 97 pi.

97·5 = £1 (fixed).

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The following shares are dealt in in London and Alexandria, and can form the object of arbitrage transactions :—

1. Agricultural Bank of Egypt.
2. Egyptian Delta Land and Investment.
3. Egyptian Estates.
4. Egyptian Hotels.
5. Egyptian Investment and Agency.
6. Egyptian Land and General Trust.
7. Egyptian Markets.
8. Egyptian Salt and Soda.

9. Imperial Ottoman Bank.
10. Land Bank of Egypt.
11. National Bank of Egypt.

The establishment of the London parity of the Egyptian prices of these shares does not require any comment.

The business hours of the Alexandria Stock Exchange are from 10 to 1 and 4 to 6. Brokerage,  $\frac{1}{2}\%$  to  $\frac{1}{8}\%$ .

## ARBITRAGE WITH ST. PETERSBURG.

St. Petersburg quotes all bonds in per cent **exclusive** of interest, and all shares in roubles **inclusive** of interest. The accrued interest has therefore to be added to the quotation for bonds, while the quoted share price represents the actual value.

All transactions are for cash, **time bargains are not permitted.**

The quotation of foreign securities is forbidden, for which reason no rates are fixed for the conversion of foreign money into Russian money.

The coupons of **some** bonds are subject to a tax of 5 %, which has to be taken into account. The St. Petersburg official price list states which bonds are exempt from the tax.

Most of the Russian bonds dealt in in London are **not** dealt in in St. Petersburg; arbitrage transactions between London and St. Petersburg are therefore not very numerous.

As an example of a parity calculation we take **Russian 4 % Consolidated R. R. Bonds serie I., 1889**, quoted in St. Petersburg 139 on the 31 March (or 18 March Russian calendar). We have therefore to pay in St. Petersburg three months accrued interest, from  $\frac{1}{4} - \frac{31}{3}$  (or  $\frac{19}{12} - \frac{18}{3}$  Russian Calendar) = 1 %, i.e. 140 % in all, and the following chain rule:—

$$\begin{aligned}\text{£}x &= \text{£}100 \text{ stock.} \\ \text{£}19\ 15\text{s. } 6\text{d.} &= 125 \text{ rbl. (fixed).} \\ 100 &= 140 \text{ r. (price + interest).} \\ 94.5 &= \text{£}10 \text{ (cheque).} \\ \hline \text{shows} & \quad x = \mathbf{93.64.}\end{aligned}$$

The coupons of these bonds and the other R. R. bonds are free of tax, and can be used as "Zollcoupons" (see page 155).

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#### IV. ARBITRAGE IN OPTIONS.



ANY person wishing to take a practical interest in the probable development of the price of a certain stock or share within a specified time, and desiring to limit his liability to a fixed sum, may do so by buying an "option".

The value of an "option" is, therefore, more or less arbitrary; one dealer may quote the same option cheaper than another, and an option-dealing between the London Stock Exchange and a foreign Stock Exchange can in consequence become at times a well-paying speciality.

If an operator foresees the rise of a special security, he, naturally, takes the same view as the person ("Bull") who buys the stock right out ("firm"). He would consequently acquire an option which gives him the right to become a buyer of the security in question, that is to say, to take up or to "call" a determined quantity of stocks or shares at a fixed price within the agreed period. For this right he would be prepared to sacrifice a fixed sum of money, similar to a premium, limiting his possible loss to that premium. The purchase of a "**call-option**" (named shortly "**call**") would give him this satisfaction.

Where the operator believes, on the contrary, in the fall of a certain security, he has, naturally, the same intentions as the person ("Bear") who has sold the same security right out ("firm"). He would then acquire an option, which would give him the right to be placed in the position of a seller of firm stock, that is, to deliver (to "put") a determined quantity of stocks or shares at a fixed price within a certain period. He would be willing to risk a certain

sum of money—but no more—for that purpose; he can attain his object by buying a “put-option,” or as it is likewise termed by “giving for the put”.

Both transactions combined would involve the right “to put” and the right “to call,” and would represent a “double option” or a “put and call” option—shortly also named “put and call” or “pac” (after the first letters of the words **put and call**).

Every option becomes due **previous** to the account it is dealt for; the declaration of options in mining shares (with some exceptions, amongst which appear Rio Tintos) has to take place at 12:45 on the carrying-over day fixed for mining shares (first day of each account), and the declaration of options in any other share or stock has been fixed at 12:45 of the carrying-over day devoted to this group of securities (second account day).

In the following pages we propose to show the connection between the three kinds of options already mentioned, and we may mention that on the London Stock Exchange the payment of the option money becomes due two days after the declaration of the option, while on several of the Continental Bourses the option money has to be paid immediately after the conclusion of the bargain.

## CALL.

The following example may serve as an illustration:—

At the end of November, Rio Tinto shares quoted 48, and the call option, or shortly, the “call,” for the end of December account £1, that is to say, we should have to pay £100 for the call of 100 Tintos at 48. At any time between end November and end December the payment of £100 would secure us the right to take up (to “call”) 100 Tintos at 48. As the end December account was

fixed for 30 December, the option became due on December 28, at 12·45, and as at that time Tintos quoted 50, we decided to exercise our right of calling 100 shares at 48.

We then sold 100 Tintos at 50, and had the following result :—

Purchase of call 100 Tintos at 48

at £1 . . . . .	=	£100
Bought 100 Tintos by "call" at 48	=	£4,800
		£4,900 to our debit
Sold 100 Tintos at 50 . . . . .	=	£5,000 . . . . . credit
<b>Profit or balance of . . . . .</b>	<b>=</b>	<b>£100 . . . . . credit,</b>

from which amount the brokerage for the purchase of the option and the sale of the shares must be deducted.

If Tintos had been quoted on 28 December below 48, say 40, we would then have abandoned the call, and the option-money of £100 would have been forfeited.

The example shows that dealings by options are sometimes preferable to dealings in "firm stock". If we had operated in "firm stock" (bought right out) at 48 and sold at 40, we should have lost on 100 Tintos £800, while the method of dealing by option limited the loss to £100.

The examples of "giving £1 for the call (buying the call) of 100 Tintos at 48 end December" can be expressed differently.

If we exercise our right on 28 December, each of the shares would cost  $48 + 1 = \text{£49}$ .

If we abandon the option, we should have to pay the option money of £1 per share, which would be the limited risk of the business.

This way of putting the matter is the Continental way of quoting calls, and the business in question in the foreign style would be: Option-purchase of 100 Tintos at 49 of

which 1 is the option money, or, as it is expressed in Paris 49/1 and pronounced "49 dont 1".

On the Paris Bourse an option is named "prime," and is in fact nothing else but a "call".

PUT

Options to deliver stocks and shares ("puts") are not quoted in Paris.

But as every "put" can be derived from a "call," the absence of any direct put-quotation is not of much importance.

Every call combined with a sale of the quantity of stock under option results in a put option, as for instance:—

£1—call 100 Tintos 48—end December } = put  
and sale 100 " 48 " }

**100 Tintos at 47 end December** at the option money of £1

because:

- (a) if the price rises, we cover our sale with the option.
- (b) if the price falls, we abandon the option, and remain a seller, covering the sale with the purchase of firm stock.

In case of (a) we have sold at 48 and

bought by option „ 48,

and limited the loss to the option money of £1 per share.

In case of (b). Supposing the price falls during the time we are protected by the option to 42, we would then buy 100 Tintos at 42, making thereby a profit of £6 per share ( $48 - 42$ ), and would abandon the option for

which we pay - - - - - £1 per share,  
and the result of the transaction would be a  
profit of - - - - - £5 per share,  
brokerages not taken into consideration.

Every "put" can be transformed into a "call" by buying the quantity under option, as for instance :

Put 100 Tintos at 48 end December at £1  
and purchase 100 , , 48 end December } =  
Call 100 Tintos at 48 at £1 end December.  
because :

(a) if the price rises, we abandon the put, and sell the 100 Tintos bought. Supposing we sell at 53, we should make a profit of 100 Tintos from

$$48/53 = £500,$$

and should pay the cost of the abandoned option - - - - - 100,  
leaving a balance in our favour of - - - £400

(b) if the price falls, we deliver the right-out-purchased 100 Tintos by way of the option, i.e.

we buy 100 Tintos at 48, and

we sell 100 , , 48,

paying the option money of £100.

### PUT AND CALL.

These options give the right to put, and the right to call ; they involve, therefore, two options, the option to deliver and the option to call, and are, therefore, also called "double option".

As the price of a call, theoretically, is equal to the price of a put, the price of a put and call ("pac") is the double of a single option.

Every "pac" can be produced by a call of double the quantity and the sale of the same quantity of stock under option, thus :

Call 100 Tintos 48 end December at £1 } = pac  
and sale 50 , , 48 end December  
50 Tintos 48 at £2.

**because :**

(a) **In case the shares fall**, we abandon the call, paying £100, which is equal to a difference of £2 per share on 50 shares. The shares which we sold at 48 would then appear to have been sold at  $48 - 2 = 46$ .

(b) **In case the shares rise**, we should exercise the call of 100 shares, of which 50 would cover our sale at 48, and the remaining 50 could be sold in the market at option time, if not already sold previously. On the first 50 shares we lose £50 ( $49 - 48 = £1$  per share), which would render the price of the second 50 shares £1 dearer per share, that is,  $49 + 1 = 50$ .

The two operations combined would result in our being a

**seller of 50 Tintos at 46 and a  
buyer , , 50 , , 50,**

a result which we should have likewise obtained by the purchase of a "pac" of 50 Tintos at 48 at £2 for end of December.

Shares sold by that "pac" would fetch  $48 - 2 = 46$ , and Shares bought , , , cost  $48 + 2 = 50$ .

**Every "pac" can be produced by a "put" of double the quantity and the purchase of the quantity of stock under option, viz. :—**

Put 100 Tintos 48 end December at £1  
and purchase 50 , , 48 end December } = pac  
50 Tintos 48 at £2,

**because :**

(a) **In case the shares fall**, we exercise the put, compensate the purchased 50 shares with 50 of the

option, and have still 50 shares open to deliver. We put at  $48 - 1 = 47$ , so that the shares purchased at 48 show a loss of £1 per share. The balance of 50 shares would have to make good the loss of £1 per share, and would therefore only fetch  $47 - 1 = 46$ .

(b) **In case the shares rise**, we abandon the put, paying £100. The purchased 50 shares would then cost  $48 + 2 = 50$  per share.

Both possibilities are expressed with the two prices 46 and 50, which is the same as a "pac" of £2 on the basis of 48 (46 and 50).

Every "pac," therefore, can also be expressed by the two prices, which would appear in case of exercising the put, or the call.

This particular form of quoting a double option is used on Continental Bourses, and is there called a "**stellage**". The word means "fixing," and is adapted for expressing the two prices within which the double option is fixed (as in the above case between 46 and 50). The difference between the two prices (£4)—in Germany called "**stell-geld**" ("money for fixing") or "**spannung**" ("distance")—corresponds to the double "pac" money. The middle between the two limits would be 48, which is also called the "middle," or the "basis" of the stellage.

Put and calls on the New York Stock Exchange are called "**straddles**" and stellages "**spreads**".

### CALL OF MORE OPTIONS.

This is an option business combined with a purchase of firm stock; it is therefore not a pure option, as it involves a transaction with firm stock, and is, therefore, subject to an unlimited risk, while a pure option fixes the possible loss beforehand.

**For instance :**

**100 Tintos at 49 for call of more end December** means :  
**the purchase of 100 Tintos FIRM at 49 end December, to**  
**which is attached the OPTIONAL calling of 100 Tintos at**  
**49 end December.**

End December we **must** take 100 Tintos at 49, and have the option to call another 100 shares at the same price.

The quotation of 49 would correspond to the actual Tinto price of 48, **as the price of a "call of more" option is the third part of the "pac" money**, which we assume was £3.

**A call of more option is produced by the purchase of a "pac" for half the stock of the call of more option plus the purchase of one-and-a-half the quantity of the stock under option.**

E.g. The above call of more option would appear through the purchase of a "pac" of 50 Tintos at 49 at £3 end December, and the purchase of 150 Tintos firm at 48.

**Because :**

(a) **In case of a fall**, we should deliver by the "pac" 50 shares at  $49 - 3 = 46$ , for which we should receive - - - - - £2300  
 keeping over 100 shares. As we have to pay for the purchase of 150 Tintos at 48 - - - 7200  
 we should have to find - - - £4900  
 for 100 Tintos, **or £49 for every share.**

(b) **In case of a rise of the shares**, we should call by the "pac" 50 shares at  $49 + 3 = 52$  and pay for them - - - - - £2600  
 for the purchased 150 shares at £48, we have to pay - - - - - 7200  
 and should have to take up 200 shares for £9800  
**or at the price of £49 per share.**

## PUT OF MORE OPTIONS.

The reverse transaction of a call of more bargain would be the put of more option.

Its value is equal to the call of more option value, i.e. one-third of the "pac" price.

The parity price of a put of more option, with a "pac" quoting £3 would be  $\frac{3}{3} = 1$ , and would therefore be 47 on the "pac" basis of 48.

A similar calculation to the one given above would lead to the price of 47, but it must be borne in mind that a put of more option in 100 shares is the product of a purchase of the "pac" of 50 shares combined with the sale of 150 shares firm.

---

Other combinations of "pacs" and firm stock would lead to the call or the put of twice more, three times more, four times more, etc., but such transactions occur very rarely on the London Stock Exchange.

## OPTIONS ON THE PARIS BOURSE.

Of all the various option forms dealt in on the London Stock Exchange, the Paris Bourse knows only the ordinary "prime" (call) and the "stellage" (pac), which was introduced there only a very short time ago, and which is sometimes used for Tintos.

As already stated, the "prime" is expressed in form of the call price and the option money. Based on the before-mentioned example, where £1 was paid for the call of Tintos at 48, the Paris quotation would be  $48 + 1 = 49/1$ .

But the ordinary prime business in Paris is of far greater importance than all the various kinds of option business in London put together.

The reason for it is this : London quotes but one price

for the single option (in the above-given example £1), while Paris deals in calls with different option-money, as fr. 2·50, fr. 5, fr. 10, fr. 20, and fr. 40, and it is obvious that these manifold kinds of risks must increase the number of transactions.

Taking £1 = fr. 25, the parity of the London option : “ **£1 call 100 Tintos, 48 end December** ” would be fr. 25 call 100 Tintos fr. 1200 end December, or expressed in the French quotation **100 Tintos 1225/25 end December**.

The difference between 1200 (actual price) and 1225 (price by option) is called the “ **écart** ” (distance), and it is clear that the longer the écart, the cheaper the option-money must be. The option-money at a price of 1240 (at the actual price of 1200) must be less than the sum of money to be paid for an option at the basis of 1200. We could find such an option on the Paris market “ dont fr. 10,” and on the basis of 1250, the option money would be still less than fr. 10.

This manner of dealing, naturally, makes the market very elastic.

Sometimes there are considerable differences in the valuation of Tinto options between the London and the Paris markets, which offer excellent scope for the arbitrage.

But it must be remembered that the option days in Paris are generally later than those fixed for the corresponding account in London, which rule is in favour of the purchase of options in Paris, and their simultaneous sale in London, while an option sale in Paris and its covering in London could only be contemplated when the declaration in Paris precedes the declaration in London. (For instance, when we sold an option in Paris for the end December settlement which we replaced advantageously in London by an option for the mid-January account.)

Options on the Paris Bourse have to be declared on option day, the day before the report day, at 1.30 ("réponse des primes").

## OPTIONS ON THE BERLIN BOURSE.

The Berlin Bourse deals in all the various option forms practised on the London Stock Exchange, only their denominations are differently expressed.

The call option is called "Vorpraemie".

„ put „ „ „ „ Rückpraemie".

„ pac „ „ „ „ Stellage".

„ call of more „ „ „ „ Nochgeschäft auf nehmen".

„ put of more „ „ „ „ Nochgeschäft auf geben".

The following example will explain the origin of these terms:—

On 2 December, Italian Rentes quoted in Berlin 103.50 for end December, and the single option for the same period  $\frac{1}{2}\%$ , i.e. a call was dealt in at  $\frac{1}{2}\%$  at the price of 103.50, and

a put was dealt in at  $\frac{1}{2}\%$  at the price of 103.50.

An exercised call would have brought the stock price to  $103.50 + 0.50 = 104$ ,

an exercised put would have

fetched for the bonds  $103.50 - 0.50 = 103$ .

In the case of the call, the price (104) increases, in the case of the put, the price (103) decreases.

This is the meaning of the German expressions:—

**Vorpraemie** = option with increasing (**advancing**) price.

**Rückpraemie** = option with decreasing price, or with a price going **back**.

**Nochgeschäft** = business with "more" stock or shares, and as "nehmen" is in our case synonymous with

“calling,” and “geben” with “putting,” the term does not require further explanation.

The example :—

“ $\frac{1}{2}\%$  call £10,000 Italians 103½ end December,”

transformed into a Berlin quotation would be :—

“Vorpraemie lire 250,000 Italians 104/½ end December”;

while the Berlin equivalent of the example :—

“ $\frac{1}{2}\%$  put £10,000 Italians 103½ end December,”

would be :—

“Rückpraemie lire 250,000 Italians 103/½ end December”.

London and Berlin have at the present time very few common stocks or shares with a lively option dealing.

The only shares offering an occasional opportunity for option-arbitrage are Canadian Pacific shares.

But the present London quotation of \$2 for the single option for four weeks does not show any margin against the Berlin quotation of the stellage at \$8 for the same period ; besides, the heavy German stamp duty on Canadian Pacific shares already acts as a great impediment to arbitrage transactions.

For practical business purposes we give the following

### TIME COMPARISON TABLE,

showing the **difference of time** of the various commercial centres **against London time** :—

	time is.....	H. M.	
Alexandria		2 —	earlier
Amsterdam	„ .....	0 20	„
Berlin	„ .....	0 54	„
Bombay	„ .....	4 51 $\frac{1}{2}$	„
Brussels	„ .....	0 18	„
Buenos Ayres	„ .....	3 53	later
Calcutta	„ .....	5 54	earlier
Constantinople	„ .....	1 56	„
Copenhagen	„ .....	0 50	„
Frankfort-on-M.	„ .....	0 35	„
Hamburg	„ .....	0 40	„
Hong-Kong	„ .....	7 37	„
Johannesburg	„ .....	2 —	„
Lisbon	„ .....	0 37	later
Madrid	„ .....	0 14	„
Melbourne	„ .....	9 40	earlier
Mexico	„ .....	6 36	later
New York	„ .....	4 55	„
Paris	„ .....	0 10	earlier
Rio de Janeiro	„ .....	2 52	later
Rome	„ .....	0 50	earlier
St. Petersburg	„ .....	2 01	„
Shanghai	„ .....	8 06	„
Sydney	„ .....	10 05	„
Valparaiso	„ .....	4 46	later
Vienna	„ .....	1 06	earlier
Yokohama	„ .....	9 19	„

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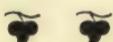
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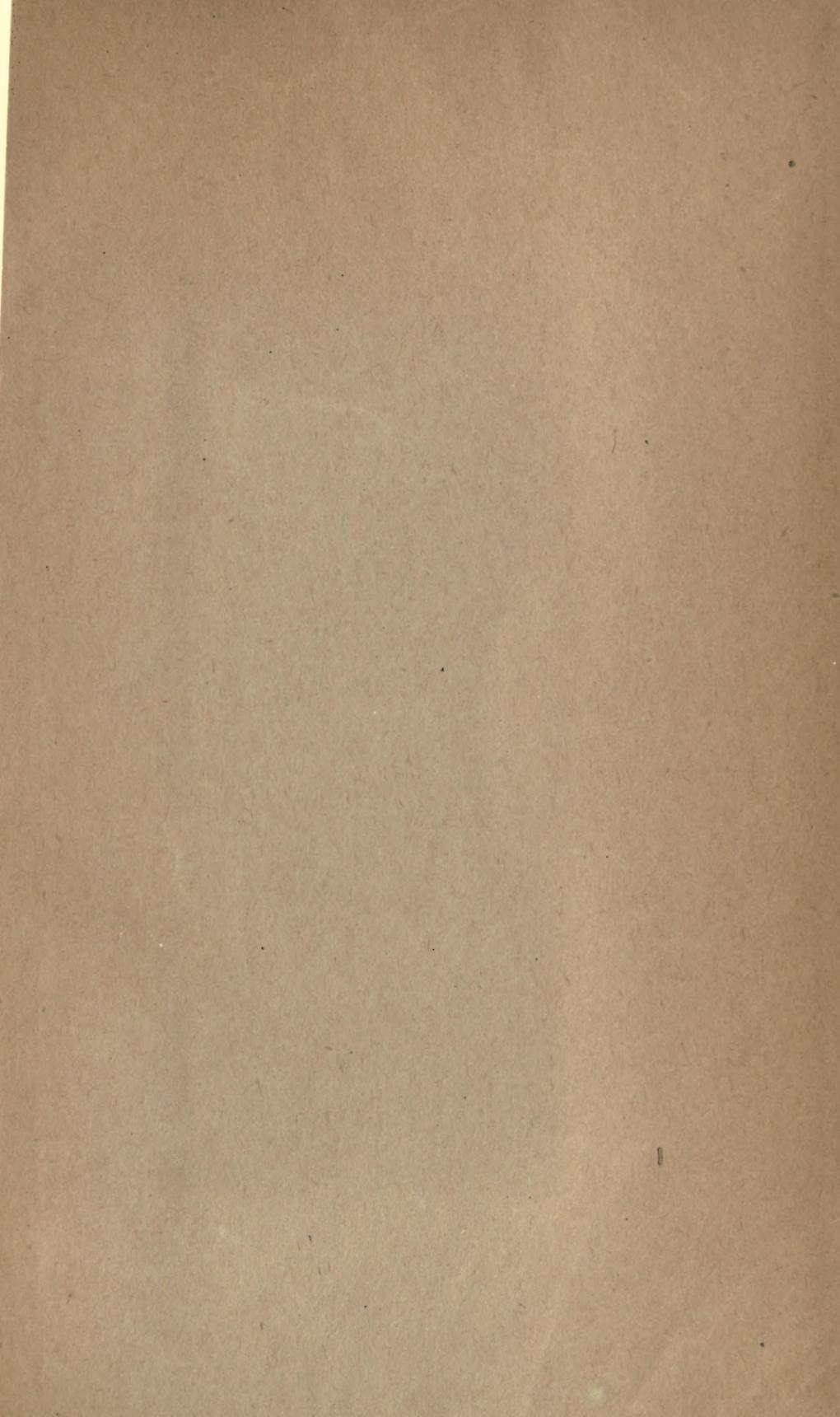
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